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The Nurseryman's Forte: To Make America More Beautiful and Fruitful

MAY 15, 1949



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The Nurseryman's Forte: To Make America More Beautiful and Fruitful

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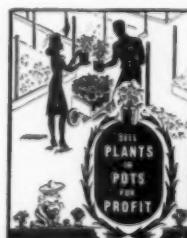
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AMERICAN NURSERYMAN

F. R. KILNER, *Editor and Publisher*
Joan L. Kilner, *Assistant Editor*

Editorial

ADD TO THE SALE.

Department stores and other retail merchandising establishments recognize that a large part of the sales made on their premises is the result of impulse. Impulse buying is said to account for thirty per cent of sales in service stores and almost forty per cent in self-service establishments. The customer may have entered the store with a definite purchase in mind, but buys one-third more because he or she happens to see something that loosens the pocketbook.

The advertising of such retail stores in the daily newspapers may feature but one, and usually relatively few, of the hundreds and perhaps thousands of articles which an individual store may carry in stock. The special offers draw the customers into the stores, and impulse buying yields the profit.

Some nurserymen have taken advantage of this trait of the public. In their salesyards are well displayed many items ready for the customers to purchase and take away. Good display is important. Roomy paths or aisles are necessary. Proper labeling as to variety and price is essential; a colored picture of the plant in flower is an excellent help in this respect.

Good display does not mean just putting items out on the counters, or in beds, so that the customers may see them. It means arranging the merchandise so that the customer is attracted first to this item and then to that—not confused by a miscellaneous and monotonous array.

If customers browse around your place unduly long and end by making only small purchases, don't blame them, but see what is wrong with your display and arrangement. Perhaps the array is monotonous, the rows are alike and one type of stock does not stand out from another. Hence the customer cannot make up his or her mind. From this source sometimes arise the numerous questions of customers; they need direction of their impulse.

By prominent display make some items stand out, those you have in quantity or want to move rapidly. A striking placard helps. Display the smaller items on the way out of the salesyard or toward the end of

The Mirror of the Trade

the customers' usual route. They will pick up additional items which can be easily added to what they are carrying.

In retail merchandising of the highest sort, particular attention is given to displays for the sake of encouraging impulse buying. But it is a phase of his business to which the retail nurseryman has given too little attention. Certainly a means of increasing the size of the individual purchase is well worth study.

EMPLOYEE INTEREST.

When a nurseryman pays the wages that are generally current, he expects something better than the type of hourly labor that waits to be told what to do and then does only that. Under present circumstances paying for labor of that type is expensive. The nurseryman expects his help to show some interest, to carry on with the job and even to evince some responsibility.

When this expectation is not fulfilled, the blame is not always entirely that of the employees. If the employer or his superintendents just parcel out the immediate tasks, without giving the employees any insight into the operations of which they are a part, lack of interest is likely to be the result. The whole picture is quite obvious to the employer, and he is likely to wonder why beginners don't see it for themselves. That is too much to expect from the inexperienced, and for efficient operations some effort at enlightenment is necessary.

The better class of help today has an interest in the work before them. That is why so large a number of individuals wish to go into business for themselves nowadays. If the employer will explain the purpose of the routine operations, let the employees see the theory of the thing, they will the more readily take an interest, since they then realize what they are meant to do.

Many large business organizations, and some small ones, have regular training classes. Employees are glad to spend an evening a week in learning how they may advance themselves. The instruction not only benefits the employee, but is advantageous to the employer in that it increases the efficiency of his current staff and makes him acquainted with those persons who can be developed for more responsible positions.

Even where such regular instruction is not possible, especially in the busy season, an occasional word of instruction, just a few minutes taken now and then, will be repaid by the saving of time in the employee's work thereafter. Everyone has sometime seen a staff that functioned as though the individuals were members of one physical body, so promptly and unerringly did they go about their separate operations. Such an organization is a pleasure to behold and is a compliment to the instruction and training given by the employer.

LILACS IN CALIFORNIA.

After giving the lilacs more attention than usual during the annual show of his firm at San Jose, Calif., W. B. Clarke lists the varieties which impressed him most this season, as follows:

*Ambassadeur	*Marceau
Ami Schott	*Maréchal Foch
Capitaine Baltet	Maréchal Lannes
*Decaisne	*Mme. Antoine
De Miribel	Buchner
Diplomate	*Monument
Evangeline	*Mrs. W. E. Marshall
*Firmament	Pearl
Henri Martin	*Prof. E. H. Wilson
*Henri Robert	Rosace
Jan Van Tol	Vestale
Jeanne d'Arc	

If he were compelled to make a choice of what he regarded as the best ten in the above list, he would select those marked with an asterisk.

Ami Schott, he says, he did not favor at first, but it has steadily improved, now makes very good clusters and has a long blooming season. Evangeline is included because, while not at all up to the later varieties, it has the great merit of being the earliest-blooming double in his collection. He has definitely come to a preference for Prof. E. H. Wilson over any other of the double whites.

In this list appear none of the Clarke originations, as he modestly leaves their rating to others.

If those persons having collections of lilacs in other sections would similarly report for these columns at the end of the blooming season, the resulting data would be of much interest and benefit to nurserymen in general in their search for a select list of lilacs.

THE Fulton Nursery, 808 Phillips street, Fulton, N. Y., was started recently by Paul Kaminuk.

Azaleas for Northern Gardens

By Donald Wyman, Arnold Arboretum

Azaleas are perhaps the most colorful of all hardy woody plants when they are in flower—reason enough why they are in demand over a wide area. Many varieties hardy only in southern gardens go to make certain spots world-famous for their colorful beauty in the spring, and other tender sorts are widely grown by the greenhouse trade as pot plants, forced into bloom especially for the Easter market. Such varieties are easily propagated by cuttings and quickly forced into bloom, but many a homeowner, learning about their tenderness the hard way, has planted them out in the garden in late spring, only to lose them the following winter.

There are many azaleas that are perfectly at home in northern gardens, provided that they have the right soil in which to grow. The number of varieties available today runs into the hundreds. They range in height from one and one-half to fifteen feet, and the flowers, in size, from the one-half inch of some little Kurumes to the three and one-half inches of well grown Royal azaleas. Colors run the entire gamut from white, through the yellows, oranges, pinks, reds and purples, with all possible combinations, yet several individuals (I am one) are still trying to breed "better" varieties. Within the past few years, thirty clones of Glenn Dale hybrids have been released by B. Y. Morrison, of the United States Department of Agriculture, for growing in the vicinity of the District of Columbia and Virginia. Farther north, the Ghent hybrids afford most colorful displays, many of them being perfectly at home in Boston's rigorous climate. Some places in the midwest are devoid of azaleas, merely because of unsatisfactory climate, but intelligent attempts at growing them often yield good results.

It is not for me to explain to commercial growers the culture of these meritorious plants, for many have had years of satisfactory experience with them. If you are successful in growing them, and what is even more important, in getting your customers to grow them, you are unquestionably on the right track. Acid soil, humus, sufficient moisture, good drainage and good mulching material about the roots which will leave an acid reaction—these standard requirements are all well discussed in literature.

Various soil acidifiers also have been fully discussed. We have found that powdered sulphur proves most satisfactory, and it is cheaper to use than aluminum sulphate. It is a little slower in reacting, but the effects from one application have lasted several years in our soils. Information on the best type of soil acidifier for local use is always available from the department of agronomy at your own state experiment station.

Propagation, too, is something which the experienced nurseryman has worked out to suit his own needs best. Many of the more tender sorts, especially those closely related to *Rhododendron obtusum*, *indicum* and *mucronatum*, are easily grown from cuttings. Unfortunately, the hardier types are more difficult to propagate. This is probably the chief reason why more of the extremely beautiful Ghent azaleas are not available today. Layering is resorted to in some nurseries.

Grafting is used by several nurseries, especially for the bright-flowered Ghent and Mollis hybrids, but the question of the correct understock is always one which must be answered satisfactorily by the individual nurseryman. Discussions on the subject have been printed on these pages from time to time. There

is probably no perfect understock. Satisfactory results may be obtained one year with understock supposed to be of a certain species when, actually, the plants have been grown from seeds of mixed parentage. This matter of grafting azaleas properly is still a wide-open question and might well be a project for some experiment station worker. Fortunate is the commercial grower who has worked it out to his entire satisfaction! We have not.

Species are often grown from seeds. Blooming plants—not very tall, but still blooming plants—can be grown in three to four years from seeds. Many of the species are now grown this way. Seeds sown indoors in flats in March result in thrifty seedlings at the end of the growing season. We sow the seeds in a fine layer of grated sphagnum moss; the flat is watered from the bottom and then covered tightly with glass until the seeds are up. This is simple, easy and quick. If done properly, damping-off should not trouble the seedlings. Most of the species can be grown easily this way, and when planted out in rich acid soil with plenty of peat or organic matter, they quickly develop into sturdy plants. One azalea flower cluster can produce 2,000 seeds, when correctly



Rhododendron Japonicum.

fertilized and normally grown. If seeds are collected in the right way and not wasted, propagation by seeds can be most economical.

Another important feature of the azalea clan, even in northern gardens, is its length of bloom. With the right selection of species, one can have

for years and has named many. B. Y. Morrison has started a whole line of Glenn Dale hybrids, suitable especially for the area about Washington, D. C. Bobbink & Atkins has introduced many, as have certain other American and Dutch nurseries. Many amateur gardeners have con-



Rhododendron Viscosum.

some azaleas in bloom in the garden from early April until July—nearly twelve weeks. The sequence of the blooming of hardy sorts in the Arnold Arboretum is as follows:

Early to mid-April—Rhododendron mucronulatum.

Early May—Rhododendron mucronatum (often tender in New England).

Mid-May—Rhododendron albrechti, obtusum varieties, schlippenbachi, vaseyi, yedoense.

Late May—Rhododendron atlanticum, gandavense hybrids, japonicum, kosterianum hybrids, nudiflorum, roseum.

Early June—Rhododendron calendulaceum.

Mid-June—Rhododendron arboreum.

Early July—Rhododendron viscosum.

Here are fifteen species, and included among these would be hundreds of varieties of which only forty-one will be mentioned here. No one person knows enough about all the azalea and rhododendron varieties to evaluate them as "good" or "poor" ornamentals. Colors and individual preferences for certain colors vary so greatly that only a committee of experts who are familiar with the many aspects of the problem would be in a position to make any such selective list.

Several individuals have contributed to the hybrid varieties now available. Joseph Gable, of Stewartstown, Pa., has been hybridizing them

tributed a variety or two, so that the list of varieties being grown in this country today is an ever-changing one.

The following list of species and varieties is offered merely as a suggestion of some of the better sorts which it is possible to grow in northern gardens (i.e., north of Washington, D. C.). They are not the only ones by any means, but they are all good. A commercial grower contemplating using azaleas for northern gardens would do well to inspect this list and make his first selections from it. After he has experience in growing these, he will be better able to select others which might prove as good. Certainly he should investigate the possibilities of growing these first before he succumbs to high-pressure advertising of "new" azaleas which may be untried in this country.

Rhododendron albrechti: Rarely found in American nurseries, this Japanese azalea has been in this country since 1892. It grows about four and one-half feet tall and has flowers of a uniform red to rose color (rose Bengal 25/2 of the English Horticultural Colour Chart) which is devoid of the purple tinges so frequently seen in many azaleas of *Rhododendron yedoense* parentage and common to many early-blooming types. The Albrecht azalea can be recommended for its pure color, hardiness in zone 5 and yellow autumn foliage, making it an asset in any garden where azaleas are grown.

Rhododendron arborescens: A common native from Pennsylvania to Georgia, this plant is nevertheless perfectly hardy in zone 4 and is valued by all nurserymen and gardeners for its late fragrant white flowers. The corolla is accented in the center with brilliant red stamens. The foliage is a glossy green and turns a dark red in the fall. Even though the flowers do not appear until the leaves are fully developed, this plant is worth while for its dense habit of growth (sometimes up to nine feet high) and its late fragrant white flowers during the middle of June.

Rhododendron atlanticum: Listed here because it is the smallest of the group and only one and one-half feet high, this is one of the few azaleas that is stoloniferous in habit. Its white flowers, flushed crimson, appear during the latter part of May and are fragrant. The plant is best used in naturalistic plantings.

Rhododendron calendulaceum: A glorious species, called the flame azalea and formerly collected in the south by the carload and shipped north where it is perfectly hardy. It may grow as high as fifteen feet, but is usually seen at nine feet or less. The flowers vary in color from yellow to red, with most plants having bright orange-colored flowers. It is the most showy of our native azaleas and is certainly one of the best for northern gardens. Growers have recognized its merit for a long time, and its sterling qualities are evident in many of our best hybrids. One of its best characteristics is the fact that its flowers withstand the direct rays of the sun much longer than do the more delicate flowers of some of the earlier-blooming Asiatic species. For this reason, these flame azaleas will look well in bloom when growing without shade for nearly two weeks, whereas the flowers of several of the Asiatic species would begin to fade in a few days. Anyone who has had the privilege of traveling through the mountains of the southeastern United States where these plants are native will always remember their colorful display in flower. There are some plants (variety aurantium) the flowers of which are a deep orange to crimson (scarlet of the English Horticultural Colour Chart). Such plants might well be propagated asexually by the enterprising nurseryman, for the brilliant scarlet color is one that remains long in the memory and is most conspicuous among the yellow and orange flowers typical of most of the plants of this species.

[Continued on page 32.]

Santa Barbara Nursery Salesyard

Display sales grounds are most elaborate in the sections of the country with milder climates, and especially so in southern California, where selling is possible twelve months in the year and a wide variety of plants can be offered. When aggressive advertising and alert management are combined with an effective sales display, the turnover reaches high volume. Kallman's Garden Nursery, at Santa Barbara, Calif., annually moves nursery stock of a dollar total running over six figures, from sales grounds of two acres. No planting or landscape work is done, but two trucks are kept busy delivering material to customers in a wide radius. Customers desiring professional planting of their grounds are referred to one or another of several individuals or firms, and the latter purchase considerable quantities of stock from Kallman's for the resultant jobs.

The location, at 228 Milpas street, is a few blocks from Highway 101, the main north-south state route between Los Angeles and San Francisco. Milpas street is one of the principal thoroughfares leading from the highway into the business district of Santa Barbara. The passing motorist's eye is drawn to spots of color, day or night, by tubbed plants in bloom displayed behind glass bays, spot-lighted after dark, which front narrow lath houses on either side of the arch, carrying the firm name in big letters, that spans a concrete driveway leading into the heart of the salesyard. Parking area is provided for a few cars there, and exit is easy onto the side street.

The entrance area gives only a hint

of the large stock of plants here, for the street corner is occupied by a gasoline filling station, already established when the site was purchased. Back of it, to the full depth of the city block, stretch the sales grounds. Trees in tubs and large cans, immediately back of the station, carry the nursery display to the passing prospects.

When one has made a left turn from the entrance driveway, he finds on his left a large display room, in which are all manner of garden supplies, tools, etc. Connecting are a storeroom and the office. Separate is a sample of a small greenhouse for a private place; then are rest rooms and, on the side street, a shed for fertilizer storage, the last the only building except the greenhouses not constructed of redwood in its natural color.

On the other side, to the right of the entering visitor after his turn, is the end of a good-size greenhouse, for the choice flowering cymbidiums that are a Kallman specialty and hobby. Next is a pleasant workroom for filling orders. Separate, at the right of the exit, is the pottery display room, an interesting little shop in itself. Leading between this and the workroom, down the depth of the nursery, is a driveway giving access to the lines of stock in cans that stretch in beds defined by rounded paths.

Back of the greenhouse and workroom are lath houses that contain cymbidiums in beds, flowering plants and other stock that requires moderate protection. Only the visitor who penetrates beyond these houses

reaches the working area, where are orderly piles of soil, tin cans, peat moss in bales, flats and packing boxes. In the midst of this area is a tool shed, and even in this working section of the nursery is a certain order that bespeaks the management behind the systematic operations of the establishment.

Though the current supply of stock seems large enough, Henry B. Stribling, manager, says the drought of last summer and the January freeze have been limiting factors. Stock is not yet available from wholesale sources to replenish all items, or the sales ground would be packed for a promising season now that spring rains have given estate owners and other residents the incentive and water to rebuild their lawns and renovate their plantings. Bert Kallman, proprietor, estimated his loss from the freeze at \$4,000 when a temperature of 19 degrees killed some tender plants in small cans and froze back larger plants of bougainvilleas, hibiscus and the like.

The volume attained at this establishment is the result of years of activity by Bert Kallman, whose leadership was recognized by his election as president of the California Association of Nurserymen. Not only has he been constantly active in trade associations, but he is just as indefatigable in civic affairs, assisting in flower shows, talking before local organizations on horticultural subjects and participating in local betterment groups. At present, for instance, he is secretary of the Milpas Street Merchants' Association, which is planning the installation of new street



Display of Stock Impresses Passers-by and Attracts Customers to Santa Barbara Salesyard.

AMERICAN NURSERYMAN



Assortment of Pottery Is Displayed in Separate Gift Shop at Kallman's.

lighting along ten blocks, at the expense of the property owners, which would make this thoroughfare as brightly lighted as State street, Santa Barbara's main business artery. Similarly, Bert Kallman has shared in other works of improvement in the thirty-six years of his residence there. He is past president of the Exchange Club and of the Santa Barbara County Horticultural Society and currently a director of the chamber of commerce and of the Retail Merchants' Association. Such prominence and constant advertising in the local newspapers keep his name to the fore in minds of residents of Santa Barbara and its environs.

Coming to this country from Sweden at the age of 16, Bert Kallman shortly thereafter served in the first World War. Experience on local private estates and in nurseries led to his entry into business, first in partnership and sixteen years ago independently. When the widening of

Highway 101 four years ago cut fifty feet off the front of his nursery, he relocated at the present site on Milpas street. There he built according to plans derived from his business experience, creating a salesyard not only attractive and efficient, but also a model for similar enterprises elsewhere.

CENTRAL MICHIGAN GROUP.

A group of nurserymen and landscape gardeners in the Lansing, Mich., area met April 13 and formed the Central Michigan Landscape and Nursery Association. Officers elected were: President, Bernard Ward, Ward's Flower Ranch, Lansing; vice-president, Harold Hicks, Cottage Gardens, Lansing, and secretary-treasurer, Mrs. Jane Smith, Smith Tree Service, Inc., Lansing.

The group plans to discuss problems common to its members and to work for the benefit of the industry.



Extensive Line of Seeds, Supplies and Equipment Fills Large Garden Store at Kallman's.

EXTEND JAPANESE BEETLE QUARANTINE AREA.

Under amendment to the regulations supplemental to quarantine 48, territory has been added to the regulated areas under the Japanese beetle quarantine. The amendments also change the procedure for inaugurating the fruit and vegetable certification requirements and add aircraft to the types of vehicles regulated. Effective date was April 18, 1949.

The Japanese beetle quarantine now covers the entire states of Connecticut, Delaware, Maryland, Massachusetts, New Jersey and Rhode Island and the District of Columbia. Small portions of Maine, New Hampshire and Vermont are affected, as well as large portions of the states of New York, Ohio, Pennsylvania, Virginia and West Virginia.

Copy of the regulations can be obtained from the bureau of entomology and plant quarantine, United States Department of Agriculture, Washington, D. C.

WEST FLORIDA GROUP.

Twenty-two persons, representing seven nurseries and seven florists' firms in Pensacola, Fla., and vicinity, attended a recent meeting at the San Carlos hotel and formed the West Florida Florists' and Nurserymen's Association.

The officers elected were: President, Fud Thornton, Fud's Flowers; vice-president, Roland Lee, Lee Floral Gardens; secretary, C. A. Roberds, Roberds Florist, and treasurer, B. Haul, all of Pensacola.

All nurserymen and florists in the west Florida area have been invited to join the new organization.

DR. M. J. DORSEY, who retired September 1, 1948, after twenty-three years as head of the department of horticulture at the college of agriculture of the University of Illinois, Urbana, has been named the new secretary of the National Peach Council. Dr. Dorsey succeeds Carroll Miller, who will devote his time to the Appalachian Apple Service.

APPEARING on the farm service hour program of radio station WKAR, Bernard Ward, Lansing, secretary of the Michigan Association of Nurserymen, and Prof. F. L. O'Rourke, department of horticulture, Michigan State College, East Lansing, discussed the use of nursery stock. They carried on a dialogue in which they answered many of the questions which persons usually ask about trees and shrubs.

Production of Hybrid Rhododendrons

PART II.

The preparation of the soil into which the seedlings will be planted requires great care, and as this mixture will be the standard compost for all subsequent operations, it will be discussed in some detail.

The first point to consider is the pH of the topsoil which will finally be used in the compost. If tests show that the soil is of a higher pH than 4.25, which will certainly be the case on any normal soil, then sulphur will have to be added at the rate of one-quarter of a pound of flowers of sulphur to each 100 square feet of area for each decimal point of pH above the required level of 4.25. The action of this sulphur is somewhat slow, and it is therefore desirable to stack the soil in a heap, dressing each 6-inch layer of soil as it is added, at least six months before it will be required. After about two months the soil should be turned and passed through a shredder to insure the complete mixing of the sulphur.

We have found that for the final compost two parts of this stacked soil, two parts of Michigan peat and one part of sharp sand, all parts by bulk, make an excellent mixture. Should the soil be on the heavy side, the sand can be increased with advantage, but on a normal sandy loam these proportions will give the desired result. To this mixture we add at the time of mixing, first, three pounds of two per cent DDT per cubic yard and, finally, five pounds of a balanced fertilizer. The whole is then carefully and thoroughly mixed by passing through the soil shredder. The fertilizer is made up as

follows: Two pounds of hoof and horn meal, nitrogen thirteen per cent; one pound ten ounces of twenty per cent superphosphate of lime, and two pounds of sulpomag., twenty-two per cent pure potash.

I should add that in many tests which we have carried out over the past eighteen months, we have not been able to find one instance where the application of flowers of sulphur or DDT either to the potting soil or direct to the beds where young rhododendron and azalea plants are growing has resulted in any visible harm to the plants concerned. If these treatments are used with common sense and reasonable restraint, they would appear to be completely harmless to rhododendrons.

The bottom of the flat is covered with a layer of coarse cinders to give adequate drainage, and then the flat is loosely filled with the compost. After consolidating, this soil is covered with a thin layer of pure Michigan peat, and the flat is then ready to receive the young seedlings. These are then carefully teased out from their bed of sphagnum, and it will be found that the fine root system of the young seedlings readily comes away from the sand and peat mixture which underlies this moss layer. The seedlings are then spotted into the prepared flats, 108 plants to each, care being taken not to bury any of the first seed leaves. It is not advisable to exceed this number, as the plants have to remain for nearly nine months, and overcrowding can result in a serious epidemic of fungus disease. As the flats are filled they are

placed in one of our long low sash houses, where for the first two or three weeks the sash are kept closed to allow the seedlings to settle down. Just as soon as new root action can be seen, the sash are removed altogether, and the whole house is heavily shaded with double or even treble layers of lath shades. Under this heavy shade the losses due to the young plants' failing to take hold after transplanting are greatly reduced. Once this somewhat critical transplanting stage is safely over, it is only necessary to keep the plants shaded and sprayed daily to insure adequate ground and atmospheric moisture. Under such conditions the plants should continue to develop steadily.

While it is quite suitable to keep these plants in a cool greenhouse throughout the winter months, we have always found that they will overwinter satisfactorily in deep frames covered with close-fitting sash and, in the colder weather, single or double layers of reed mats. We have had temperatures as low as 10 above zero without the slightest sign of frost either on the plants or on the soil in the flats. Even when long spells of really cold weather freeze up the plants, little or no damage results if the frames are kept covered with mats until the plants have had a chance to thaw out slowly. Nearly every case of serious frost damage or kill follows only when a frozen plant is unprotected from strong sunlight and is allowed to thaw out rapidly. It is this rapid thawing which causes the damage. Throughout the winter months it is, of course, necessary to



Spotting the Seedlings.



Planting in Frames. Note Planting Stick.

give the plants in deep frames periodic inspections to insure that no small spot of fungus or mildew is spreading and becoming epidemic. Air is given every day that the weather is suitable, and a general close watch is maintained for trouble of any description.

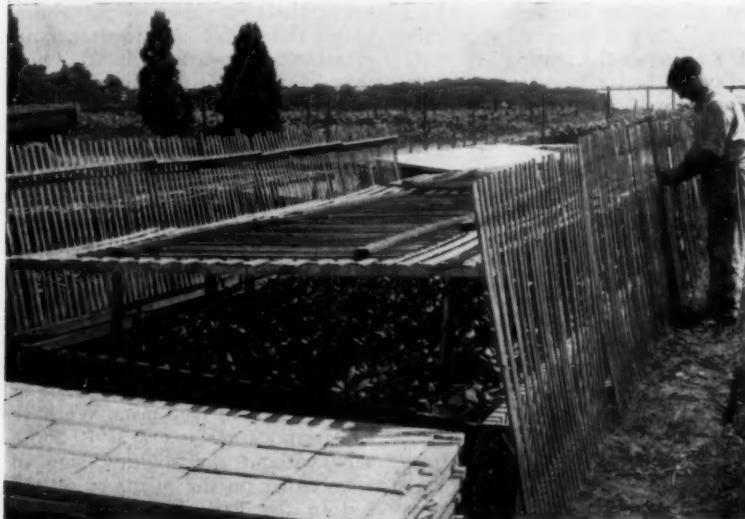
If the greenhouse space is not required for any other purpose, then the young plants in flats can be grown gently on throughout the winter. This treatment is of particular value if one is short of understocks and

had been 5.5, the difference would have been 1.25 and the amount of sulphur required would have been three and three-quarter pounds. These figures are given for an average medium loam; for heavier soils the amount should be slightly increased and for light sandy soil slightly lowered. This sulphur, together with the required amount of DDT for the Japanese beetle quarantine, is then applied to the frames as soon as possible in the spring and Rototilled into the top six inches. As the

yet with all leaves cleanly clear of the ground. To deal with this operation successfully needs care and close attention to detail. It is an operation only to be entrusted to your most reliable workers. As each section of the bed is finished, the plants should be carefully watered in with a fine rose and immediately shaded. If the weather is at all uncertain, the frames are covered with sash for a few days to allow the plants to settle in; then as new roots are seen, these are removed, and lath shades, giving at least fifty per cent shade, are fixed. From then on little is required except that attention dictated by good cultural practice. A careful watch should be kept for the rhododendron lacewing fly and possibly aphid. It is well to spray at 2-week intervals from early in May with nicotine to which has been added a suitable amount of wettable DDT until no sign of lacewing or any other insect has been seen for at least two months. The routine spraying can then be discontinued, but a sharp watch should be maintained for any signs of reinestation. Spraying should include adjacent blocks of rhododendrons or azaleas from which the insects might come. The effect of a heavy attack of lacewing fly can be quite serious, for it does greatly reduce the vigor of the understocks, and once established, it is extremely difficult to eradicate. Later, under the warm humid conditions of the grafting beds large quantities of eggs will hatch out and can easily ruin a promising batch of plants. Dusting the plants with a ten per cent DDT powder is also an excellent method of clearing up lacewing fly and is quite harmless to the plants. Care must be taken to direct both spray and dust to the underside of the leaves, where the lacewing fly usually can be found.

Through the early summer months the plants should develop rapidly. It should be a routine measure to examine carefully all beds at least once a week for diseased plants, and as they are removed, the hole should be filled with a mixture of peat and soil to which a generous dose of sulphur has been added. If all the points which have so far been outlined are carefully followed, by October you should have a first-class batch of vigorous, healthy understocks ready for potting.

We normally use a three and one-quarter inch pot for this purpose and this we find to be satisfactory in every way. Some growers do not bother with this operation of potting, but just graft the plants direct into the bench, but this method would only be satisfactory for the small



Seedlings growing on in the summer. Note heavy shades. Overhead irrigation provides frequent and generous watering.

wishes to produce some plants for grafting in the shortest possible time. If seeds are sown in the manner described early in August, then the young seedlings can be pricked off just before Christmas and, if kept growing in a cool house, should be in a suitable state of development for planting out in the beds late the following spring. From such a batch, it is possible to obtain a fair percentage of grafting-size plants fifteen months from the time of sowing the seeds.

As early as possible in the spring we commence the preparation of the frames which are to receive these young plants. Each frame is tested for pH, and sufficient sulphur is added to adjust it to a point below 4.25. The required amount of sulphur is calculated on the basis of four ounces of sulphur per hundred square feet of ground for every decimal point that the pH is above the desired level. For instance, if your soil tests a pH of 5.0 and you wish to lower it to a pH of 4.25 the difference between the two is .75 and you therefore require one and three-quarter pounds of sulphur per hundred square feet. If it

time for planting comes near, i.e., about April 1, a light dressing of peat, and if the soil is at all on the heavy side, a similar dressing of coarse sand, are applied to the frames and are again Rototilled into the top six inches. No additional plant food of any kind is added, for it is of first importance not to overstimulate the plants during the growing season.

The seedlings are then carefully blocked out of the flats, a solid square of roots and soil being retained on each plant; are graded into two sizes, and are then planted into the prepared frames on approximately 3-inch squares. Firm planting is, of course, essential, and of equal importance is the care given to the young plants during planting. The amount of damage that can be done to the young and tender hair roots of the seedlings in a few short minutes of drying sun and wind is tremendous, and I always insist that all plants waiting to be planted shall be covered with damp burlap squares.

When finished, the plants should be firmly placed in a completely level bed and the roots properly covered,

grower, who would have each and every operation under his keen personal supervision.

The plants are lifted two frames at a time, early in the morning, and are removed at once to the potting shed. Here they are trimmed to remove any double growths; some of the leaves from the base of the main stem are removed to give a clear area of stem for grafting, and the plants are then potted, in soil similar in composition to that made up for the flats when spotting, i.e., two parts loam, two peat, one sand, plus DDT and a proper amount of carefully balanced fertilizer. Many of the plants have such large root balls that it will be found necessary to knock out much of the soil before they can be potted. Firm potting is essential, for nothing is more annoying than to try to graft a plant that is loosely fixed in the pot.

After being potted, the plants are set up in a cool greenhouse and are carefully sprayed twice a day, while an even temperature of from 60 to 65 degrees is maintained to induce the plants to make new roots into the pot ball. Higher temperatures are not desirable, but under the conditions described it will be found that the stocks quickly root into the pots and should be ready for grafting by the beginning of December.

[To be continued.]

COVER ILLUSTRATION.

Rhododendron Roseum.

Among the hardiest of the native azaleas, *Rhododendron roseum* is also one of the most widely distributed, occurring from Quebec southward through New Hampshire,



Overwintering flats of *Rhododendron ponticum* seedling understocks. Note deep frames, sash covering—removed here to take this picture—and the additional covering of mats ready to use when severe weather is expected.

Vermont, New York, western New England and Pennsylvania to southern Virginia and westward to Ohio, southern Illinois, western Tennessee and southeastern Missouri.

This species is reported as more tolerant of alkalinity than other azaleas. Found in dry woods and at the edges of swamps, in acid soil, it has been reported growing in some parts of its area in soils underlaid with limestone. It is safest in planting this shrub to put it in an acid soil.

R. roseum is highly regarded as a garden shrub. It is much branched

and grows two to eight feet high, rarely up to fifteen feet, and is often as broad as tall. The flowers, about one and one-half inches across, are usually bright rose-pink, with pink stamens, and are borne in clusters of five to nine, having a spicy clove scent. The blooms occur in late May in the north, before or as the leaves unfold.

Over much of its native area *R. roseum* is found accompanied by *R. nudiflorum*, of which the former is sometimes regarded as a geographical variety and with which it is sometimes confused. *R. nudiflorum* is inferior in color and is odorless. *R. roseum* is also sometimes confused with *R. canescens*, but the latter is paler in color and not hardy in the north, its native range being the southeastern Appalachians.

Sometimes known as the rosy Pinxter bloom, or downy Pinxter bloom, *R. roseum* is also known as the mayflower azalea. In addition to its other good garden qualities, it endures wind and sun better than other azaleas.

E. L. ECKERLEY, operator of Orchardview, Noblesville, Ind., has sold the Tre-Tex business to Richard A. Whalen, Plainfield, Ind.

PARTNERS in the newly formed Hinkle & Touff Landscape & Nursery Co., Paris, Ky., are Buckner Hinkle, of the Hinkle Contracting Co., and Hirsch Touff, landscape architect, formerly of Dayton, O.



Propagating house, showing newly-potted understocks set up in the grafting benches. These will remain here until a new root system has been made in the pots.

Plant Notes Here and There

By C. W. Wood

A Minnesota reader of this column says that he has heard the narcissus-flowered anemone, *Anemone narcissiflora*, praised highly, and he asks if it is a practical garden plant. From personal experience, I should say it is not only a practical plant, but also a beautiful one.

Imagine, if you will, a sudden explosion of white windflowers some day in June, and you will have a picture of the lovely plant, *A. narcissiflora*. Then watch the plant during a year of growth, from the first appearance of the tuft of pretty, hairy leaves to the growth of the hairy stem to a height of a foot and finally to the profusion of lovely white flowers in umbels up to five in number about an inch and one-half across, and you cannot help liking it.

You will like the plant even better when you find out how easy it is to grow. The last time I grew it here in northern Michigan, in about 1942, it had been planted several years before in the part shade of a Siberian elm tree and forgotten until its display of flowers the following spring reminded me of its presence. It remained there without any care, increasing in loveliness from year to year, until it was removed for other experiments. This experience is merely an example of the plant's hardiness, even when it is completely neglected. I am sure it would be equally desirable in most other sections, for it has a wide range in nature.

The "Cyclopedia of Horticulture" says that *A. narcissiflora* is native to the mountainous regions of the northern hemisphere. I have grown plants of this type which came from Canada, central Europe and western Asia, according to the records, and have found that they all had white flowers, although one group of flowers had a faint suggestion of blue or purple on the outside. I can find no record of the plant's origin. Nevertheless, *A. narcissiflora* is a good plant, easily grown in half shade and sufficiently showy during June and part of July to satisfy the most exacting gardener. Like most windflowers, it is easily grown from fall-sown seeds.

Woodruffs.

Mention woodruffs to an experienced gardener, and he probably will have visions of the sweet-smelling *Asperula odorata*, a favorite of the old herbalists and of present-day gardeners who like the plants popular

in the old days, or he may picture the misty sprays of *A. hexaphylla*, a plant with a grace that merits far more attention than it now receives.

What I was thinking about, however, when this subject came to my mind was one, or perhaps two, small members of the woodruff clan. The indeterminate number is used because the identity of the plants is clouded in the literature. L. H. Bailey, in "Hortus Second," makes the two types, *A. gussonei* and *A. suberosa*, synonymous. However, the plants are available in seeds that are distinct. So take your choice, but be sure to get both if you are interested in unusual plants of definite value for the rock garden.

I have grown the plants several times, and the one bearing the name of *A. gussonei* makes little dark green cushions, two to four inches thick, displaying rose-pink flowers in the spring. *A. suberosa* is smaller, being less than half the height of *A. gussonei*. It spreads out a furry carpet, over which light pink trumpets hang in the early spring. Both plants, especially the furry *suberosa*, need good drainage, sunshine and a fair amount of moisture at the roots. Being from Sicily and Greece, respectively, these small plants must be given well sheltered spots in northern gardens. They are most easily propagated by division, though fresh seeds also furnish a ready means of propagation.

Aethionema.

I offer an apology to those readers who dislike writing which does not carry practical information in every line, since these comments on Persian candytufts, prompted by correspondence with a reader, were written for my own pleasure.

One is sure to be amazed when he stops to think about the tremendous amount of useless, as well as useful, information which he accumulates over a long period of years. Sometime in the dim past I read of the symbolism attached by the ancients to a sprig on a rock. As I recall it now, the rock was their symbol for constancy of obligations and for durability. The sprig was used to show the struggle that the force of life has against environment. And the combination of the sprig and the rock was the symbol of a life of strong character, the sprig being life and the rock the firm foundation upon which it is built.

Why the symbolism has remained

so long with me is not easily explained, unless it is because I was reminded of it for several years every time I passed one spot in my garden where a Persian candytuft had seeded itself into a cleft in a limestone. With no more than a teaspoonful of soil in a tiny pocket and a small opening caused by weathering, through which roots pushed to moisture and food below, a small blue-leaved shrub took up its abode, bursting forth each spring into a glorious explosion of pink and, by its hardiness and brightness under apparently adverse conditions, proclaimed its "strong character."

Aside from the lesson it offers, the plant and most of its relatives have more than the ordinary amount of garden value, not only in the rock garden, where they usually can be found, if used by gardeners at all, but also in sunny well drained spots in borders and as edgings.

To me their "most gentle and compelling charm," as Mrs. Wilder says of the genus, is their beautiful foliage. Imagine little shrubs, sometimes pressed close to the surface and at other times in the form of tiny upright bushes, densely clothed in a garment of blue-gray throughout the year, and it will give you some idea of the landscape possibilities of these cross-flowered plants. The blue of their leaves is not only pleasant in itself, but its ameliorating influence may be used to compensate for unattractive plants or for a lack of other plants in a garden.

There are more than twenty types of aethionemas mentioned in the literature, and they all are more or less confused in gardens and nurseries. The plants mix readily with other plants, and the apparent similarity of some of them has not helped matters. In any case, one is safe in getting any plant bearing the name, aethionema, knowing that it will give much in return for the little care it needs.

Although Aethionema Warley Rose seems most popular among gardeners at present, it lacks the blueness of foliage which make many of the species attractive. Its flowers, like miniature rose daphnes, are its saving grace. But for lovely blue foliage one has to use kinds like *A. armenum*; *A. cordifolium*, often sold as *Iberis jucunda*; *A. grandiflorum*; *A. pulchellum*, or *A. schistosum*.

All these types grow easily in deep, gravelly, limy soil in full sun, defy-

IN STORAGE

IMMEDIATE SHIPMENT

TREES

	Per 10	Per 100	
Lombardy Poplar	\$ 2.90	\$ 25.00	
5 to 6 ft., br.			2 to 3 ft.
4 to 5 ft., br.	2.20	18.00	18 to 24 ins.
6 to 8 ft., whips			
(\$175.00 per 1000)	...	22.50	18 to 24 ins.
Chinese Elm			2.90 25.00
5 to 6 ft., root-pruned seedlings	5.50	50.00	Lonicera zabelii
4 to 5 ft., root-pruned seedlings	2.50	22.00	18 to 24 ins. 3.50 30.00
3 to 4 ft., root-pruned seedlings	1.20	10.00	Philadelphus coronarius
Rose Acacia, standards			2 to 3 ft. 4.00 35.00
5 to 6 ft., stems	20.00	175.00	18 to 24 ins. 2.90 25.00
4 to 5 ft., stems	17.50	150.00	Spiraea billardi
3 to 4 ft., stems	15.00	135.00	18 to 24 ins. 2.90 25.00

SHRUBS

	Per 10	Per 100	
Almond, Fl., pink			2 to 3 ft. 5.00 45.00
2 to 3 ft.	5.00	45.00	18 to 24 ins. 4.50 40.00
Buddleia Charming			
Medium	2.40	20.00	
Buddleia Dubonnet			
Medium	2.40	20.00	
Buddleia Floralart			
Medium	2.40	20.00	
Cornus alba sibirica			
2 to 3 ft.	4.00	35.00	
18 to 24 ins.	3.00	25.00	
Deutzia Pride of Rochester			
2 to 3 ft.	2.50	22.00	
Forsythia fortunei			
2 to 3 ft.	4.00	35.00	
18 to 24 ins.	2.90	25.00	
Forsythia intermedia			
spectabilis			
2 to 3 ft.	4.00	35.00	
18 to 24 ins.	2.90	25.00	

SHRUBS—Cont.

	Per 10	Per 100	
Lonicera tatarica rosea			2 to 3 ft. \$4.00 \$35.00
18 to 24 ins.			18 to 24 ins. 2.90 25.00
Lonicera tatarica rubra			
18 to 24 ins.			18 to 24 ins. 2.90 25.00
Lonicera zabelii			
18 to 24 ins.			18 to 24 ins. 3.50 30.00
Philadelphus coronarius			
2 to 3 ft.			2 to 3 ft. 4.00 35.00
18 to 24 ins.			18 to 24 ins. 2.90 25.00
Spiraea billardi			
18 to 24 ins.			18 to 24 ins. 2.90 25.00
12 to 18 ins.			12 to 18 ins. 2.10 18.00
Spiraea vanhouttei			
2 to 3 ft.			2 to 3 ft. 2.90 25.00
18 to 24 ins.			18 to 24 ins. 2.10 18.00
Tamarix africana			
3 to 4 ft.			3 to 4 ft. 4.50 40.00
2 to 3 ft.			2 to 3 ft. 3.50 30.00
18 to 24 ins.			18 to 24 ins. 2.50 20.00
Tamarix hispida			
3 to 4 ft.			3 to 4 ft. 4.50 40.00
2 to 3 ft.			2 to 3 ft. 3.50 30.00
18 to 24 ins.			18 to 24 ins. 2.50 20.00

PRIVET

	Per 100	Per 1000
Amur River North		
2 to 3 ft., 5 canes	\$18.00	\$160.00
18 to 24 ins., 3 canes	10.00	90.00

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SELL—\$22.00 to \$26.40
(10c ea. or as low as \$1.00 per doz.)

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ing both drought and heat. They are grown easily from seeds, but because they often show mixed parentage, they are best propagated from cuttings, especially in the case of Warley Rose and other named varieties. Cuttings, taken of new growths soon after flowering, with a heel, root surely and quickly in a shaded frame.

Some Alpines.

In answer to the request of a New Jersey nurseryman, I am including information on some special alpines in which he is interested.

Thalictrum chelidoni is a lovely meadowrue belonging to the same group as the equally attractive *T. dipterocarpum*. Both came from Asia, I believe. In contrast to the height of three feet, more or less, of the latter, *T. chelidoni* does not exceed nine inches, but has the same fluffy flowers, large for the size of the plant; the sepals are rosy-lilac, and the stamens, citron. Like others of the chelidonian group, it needs a little special care, including a stony, well drained but not infertile soil and plenty of moisture at the roots during the growing season.

I do not remember ever having grown *T. petaloideum* and do not find it in my notes; so I am depending on the usually reliable information Farrer included in his book, "The English Rock Garden."

There it says *T. petaloideum* "has great distinctiveness, as well as great distinction of habit." The tuft of leaves is said to resemble a small columbine, with stiff stems of from a foot to eighteen inches, bearing upright, ivory-white flowers from mid-summer on. The plant is reported to be easy to grow in any open soil.

Papaver triniaefolium is one of the many monocarpic poppies native to Asia Minor and one of the loveliest as far as foliage is concerned. If foliage alone will satisfy one, *P. triniaefolium* is a good plant to choose. In it there is a rosette of beautiful silver, glaucous leaves, cut into the finest filigree. The flowers, fugitive and pale purple, are of little value. The plant has grown easily in the light soil and sunshine of my garden, and it selfsows freely.

Phlox austromontana is one plant I had never even heard of; I found it only after much searching in a flora of Arizona. If obtainable, the plant, from its description, sounds as though it would make an impression on gardeners in the warmer parts of the country. According to the description, the plant is small, with narrow, pointed, downy, powdered leaves, always the sign of a beautiful

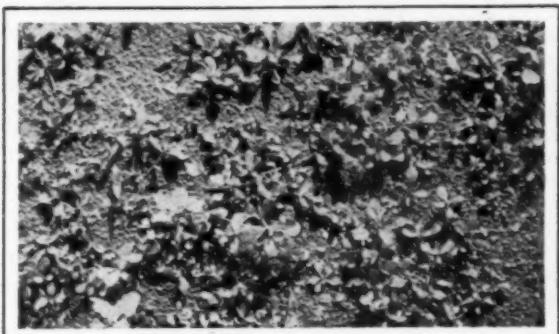
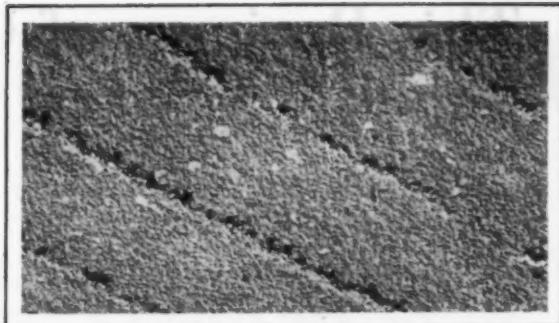
[Continued on page 18.]

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DOWFUME MC-2 CAN DO!**

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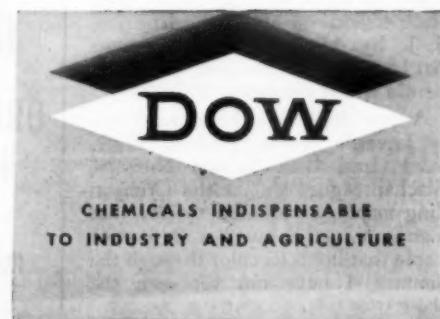
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Here's a new, more effective way to kill weeds, nematodes, and soil insects in seed beds! Dowfume MC-2 controls most weed and grass seeds, stolons and roots of perennial plants, nematodes, and soil insect pests throughout the tilled layer of soil. MC-2 gives the grower a simple, low-cost treatment that helps to insure strong, healthy seedlings by removing weed competition and root-destroying parasites.

MC-2 has been thoroughly tested by Dow, cooperating Experiment Station personnel, and growers. It has given excellent results both under glass and in the field. Tests have shown that up to 99% of the weed seeds present in the soil are killed by treatment with MC-2. Plant seedlings grown in treated beds are often more uniform, and more vigorous. If you are looking for a quick, effective and low-cost way to treat plant beds before seeding, ask your dealer for Dowfume MC-2, the new soil fumigant.

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This Business of Ours

Reflections on the Progress and Problems of Nurserymen

By E. Sam Hemming

RED-FOLIAGED PLANTS.

As a rule I do not care for variegated foliage in trees and shrubs. Too often the odd coloration in the leaves is merely a novelty and has no real landscape attractiveness. But I do like some of the red-foliaged plants for several reasons. This type of foliage offers pleasing contrast and foil to white-flowered plants, and white is the predominant flower color. In addition, the color goes well with the soft greens of the new spring growth on other plants. American architecture, also, is predominantly white, and the contrast of red foliage with a white house is pleasing.

The attractive combination of a purple hazel with pearl-bush prompted this article. The purple hazel, *Corylus avellana atropurpurea*, is a plant that could be propagated and sold much more freely than it is. This plant grows as a large shrub and has dark purple foliage. It is readily propagated by layering. Its fault is that it fades, as do most dark-foliaged plants toward the summer. Also, the Japanese beetles will eat it.

The most widely known red-foliaged plants are the many strains and varieties of the little dwarf Japanese maples. The best of these are the dark types, like *novum*, that do not fade in the summer, and the cut-leaved varieties, that tend to be pendulous and are graceful. These and other varieties are usually grafted, but the plant is so variable that often some choice specimens result from plants grown from seeds. Of course, all seedling plants are not choice.

Among the big growing trees of this type I like best the Rivers purple beech. This is the best dark-leaved variety of the European beech. It makes a handsome, spreading, long-lived shade tree, often reaching a height of from sixty to eighty feet. The region around Bordentown, N. J., has many fine old specimens that I have always guessed came from the old Moon nurseries.

A new shade tree, being marketed by Lovett's Nursery, Little Silver, N. J., and Gulf Stream Nursery, Wachapreague, Va., is the Crimson King maple, a patented variety that is an improved Schwedler (Norway) maple that holds its color through the summer. I have not yet seen the plant.

The flowering plums offer three attractive medium-size, red-foliaged trees. Of these I prefer *Prunus blireiana* because it has an attractive, double, soft pink flower that comes before the foliage, making it a dual purpose tree. The other two varieties are *Prunus pissardi*, with single white flowers, and the clone *Othello*, with darker foliage.

Perhaps, the least attractive red-foliaged plant to me is the purple barberry. The color of the plant is good, but as the plant is usually used as a hedge, it is then too much of a good thing.

E. S. H.

PLANT NOTES.

[Continued from page 16.]

plant, and large pale blue or white flowers, almost stemless. If there is any type of phlox that sounds more enticing to a lover of blue flowers and silvered foliage, I have not read of it.

Silene orphanaea is a glorified S.

NORTHERN-GROWN LINING-OUT EVERGREENS

	Per 100	Per 1000
<i>Abies balsamea</i>	\$4.00	\$25.00
4 to 8 ins.....	8.00	60.00
8 to 12 ins.....		
<i>Thuja occidentalis</i>	3.00	20.00
3 to 6 ins.....	5.00	40.00
6 to 12 ins.....		
<i>Tsuga canadensis</i>	4.00	25.00
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All the above stock is first-quality collected seedlings.		

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	Per 100	Per 1000
8 to 12 ins.....	\$16.00	\$150.00
2-yr. transplants..		
12 to 15 ins..	25.00	
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Send for complete wholesale list.		

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Save replacement expense.
Also Yellow and Orange Climbers.

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American Association of Nurserymen
July 17 to 21, Fairmont Hotel, San Francisco, California

The July 15 Special A. A. N. Pre-Convention Number, the outstanding issue of the year, featuring the nursery industry's biggest trade event of the year.

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You don't have to stock bulbs, except for pickup orders, and Stassen will ship in strict confidence direct to your customer under your own label. It's the

Write for FREE SAMPLES, LIBERAL DISCOUNTS and COMPLETE SALES PLAN.

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ROOTED CUTTINGS

	Out of benches. Ready now.	Per 100	Per 1000
7000 Retinospora plumosa aurea	\$ 9.00	\$ 75.00	
500 Retinospora plumosa argentea	10.00	90.00	
3000 Retinospora plumosa	9.00	75.00	
7000 Taxus cuspidata, upright	10.00	90.00	
6000 Taxus cuspidata, spreading	10.00	90.00	
2000 Taxus cuspidata brevifolia	12.00	100.00	
4000 Thuja occidentalis	9.00	75.00	
100 Thuja occidentalis lutea	9.00	75.00	
1000 Thuja occidentalis hoveyi	9.00	75.00	
500 Thuja occidentalis recurva nana	10.00	90.00	
500 Thuja occidentalis woodwardii	10.00	90.00	
3000 Thuja occidentalis vermaeana	10.00	90.00	
3000 Thuja occidentalis pyramidalis	10.00	90.00	
7500 Ilex glabra	7.50	65.00	

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New London, Conn.

CERTIFIED BLUEBERRY PLANTS

1-year Rooted Cuttings, 2 and 3-year Nursery Plants,
all varieties.

Propagated from stock taken from our own productive farms.

Guaranteed True to Name.

SEND for RIGHT WHOLESALE PRICES.

**GALLETTA BROTHERS'
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LILACS

French Hybrids and Standards in
30 best cut flower varieties.
1-yr. grafts, \$25.00 per 100; \$200.00
per 1000.

Ask for Descriptive List.

Also list of Taxus and other liners
for Spring, 1949, shipment now
ready.

DEERFIELD NURSERIES
DEERFIELD STREET, P. O., N. J.



AMERICAN NURSERYMAN

flowers more freely than *P. nitida* as a general rule.

Pseudopyxis depressa, the last alpine about which the nurseryman asked, is unknown to me at the present time.

Iris Gormani.

It is unfortunate that western irises have the reputation of being difficult to handle in the east. It is true, of course, that most of them do not withstand disturbance of the roots well, and this probably accounts for the poor opinions that gardeners have formed of them. As I remember, I have never been able to establish *Iris douglasiana* in plants from the west. However, fresh seeds germinate freely and make blooming plants within two or three years which are permanent if the winters are not too severe. The same is true of the other western irises, except that one rarely has to worry about tenderness to cold in most kinds.

I. gormani is one of the least exacting of the western irises of which I know, being easy to establish when grown from seeds or brought in from nursery-grown stock, if given its few requirements. In northern Michigan it grows best in part shade, at least during the hottest part of the day. Part shade and a humus-filled soil, with plenty of moisture during the growing season, seem to be the sum of its needs, though gardeners who have heavy soils say that it requires good drainage there. Under these conditions an established plant is floriferous during a long blooming season in late spring and early summer.

As usually available in western nurseries, *I. gormani* is a delightful shade of soft yellow. It is said to vary in nature, and this is in line with other species from the coast. In this type the color varies from milk-white through shades of cream and yellow to apricot. It is easily grown from seeds, but it is difficult to get true seeds, for the plant hybridizes with nearly every apogon iris near it.

A NEW landscape and nursery firm, the Little Brook Nursery, has been started at Avon, Conn., by Rodger Dudley and Dennis Thimoth.

A COMBINATION nursery and garden store has been opened at Central parkway and Dixmyth street, Cincinnati, O., by C. E. Persons & Sons, Cincinnati.

FORMERLY owned by Herman F. Canstein, Hillside Acres Greenhouses, Sixty-sixth and Grover streets, Omaha, Neb., have been purchased by Richard Gruber.

"Get to Know LEGHORN'S for Your Quality Evergreens"

This is your last call for liners. We can ship until the middle of May. We still have some exceptionally fine stock left in the items listed below. Order now, so as not to be disappointed at planting time.

Taxus Cuspidata	Per 100	Per 1000	Taxus Hatfieldi	Per 100	Per 1000
2-yr., T.	\$30.00	\$250.00	2-yr., T.	\$ 30.00	\$250.00
3-yr., T., heavy, cutback, beautiful plants	35.00	300.00			
Taxus Cuspidata Nana			Taxus Capitata, cutting type from leaders.		
2-yr., T.	30.00	250.00	2-yr., T.	30.00	250.00
4-yr., TT.	50.00	450.00	5-yr., TT., 15 to 18 ins.	90.00	850.00
5-yr., TT.	65.00	600.00	12 to 15 ins., seedling type	150.00
Taxus Intermedia			Taxus Columnaris Mooni		
2-yr., T.	30.00	250.00	2-yr., T.	30.00	250.00
5-yr., TT.	50.00	450.00			
7-yr., TTT, 10 to 12 ins.	75.00	700.00	Thuja Pyramidalis		
Taxus Hicksii			2-yr., T.	30.00	250.00
2-yr., T.	30.00	250.00			
4-yr., TT.	50.00	450.00	Thuja Boothii		
6-yr., TTT.	90.00	850.00	2-yr., T.	30.00	250.00

We cannot accept orders for less than 100 of a size and variety. 250 plants furnished at the 1000 rate. Write in for prices on our B&B evergreens, also, as we believe we are growing some of the finest evergreens to be found.

LEGHORN'S EVERGREEN NURSERIES

Geer St.
CROMWELL, CONN.

TELEVISE SHOW EXHIBIT.

During the Detroit flower and garden show, held March 26 to April 3, the foundation planting exhibited by the Nursery and Landscape Club of Michigan State College, East Lansing, was televised over station WXYZ. The students changed the exhibit several times during the show, and the television program began just as one foundation planting was being taken down and ended after the completion of another planting.

The faculty adviser of the club was interviewed on the program and introduced the students who were working on the display.

SPEAKING at a meeting of the Syracuse Rose Society at Syracuse, N. Y., Eugene S. Boerner, research director, Jackson & Perkins Co., Newark, who has introduced many varieties of hybrid tea roses and floribunda roses, said that the rose growers of the United States are now ready to compete with those of Europe. Mr. Boerner, who traveled in Europe last summer, reported that an American floribunda rose, Fashion, won the only gold medal awarded to any of the seventy-two competing roses at Great Britain's rose show last August.

ROSES — No. 1, \$4.50 per 10; \$40.00 per 100, in the following varieties:

HYBRID TEAS

Ami Quinard	E. G. Hill	Red Radiance
Betty Uprichard	Joanna Hill	Roslyn
Brillatiff	Luxemburg	Sunburst
Condele of Saastago	Lady Hildredon	Snow Thérèse
Dame Edith Helen	Margaret McGredy	Talisman
Edith Nellie Perkins	McGredy's Scarlet	
Etoile de Hollande	Mrs. Chas. Bell	HYBRID PERPETUALS
Editor McFarland	Pink Radiance	American Beauty

Red Radiance

Roslyn

Sunburst

Snow Thérèse

Talisman

HYBRID PERPETUALS

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CLIMBERS: American Beauty, Mrs. Du Pont Climber, Talisman Climber.

POLYANTHAS: Edith Cavell, Golden Salmon, Ideal, Katharina Zeimet, Orleans.

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A complete line of well grown hardy plant material

Evergreens and Lining-out Stock

EVERGREENS POTS

	Per 100
2000 Taxus Cuspidata, 6 to 8 ins.	\$22.50
12,000 Juniperus Chin. Pfitzeriana, 6 to 8 ins.	20.00

FIELD FRAMES

5000 Juniperus Hetzii Glauca, 6 to 8 ins., 2-yr.	25.00
5000 Juniperus Hetzii Glauca, 6 to 8 ins., 1-yr.	20.00
2000 Juniperus Hor. Pl. (Andorra), 6 to 8 ins., 2-yr.	20.00
4000 Juniperus Hor. Pl. (Andorra), 6 to 8 ins., 1-yr.	17.50
2000 Taxus Capitata, 4 to 6 ins., 1-yr.	18.00
2000 Taxus Cuspidata, 4 to 6 ins., 2-yr.	20.00
2000 Taxus Cuspidata, 4 to 6 ins., 1-yr.	18.00
1200 Taxus Intermedia, 4 to 6 ins., 2-yr.	20.00
1200 Taxus Media Hicksii, 4 to 6 ins., 2-yr.	20.00
1300 Taxus Media Hicksii, 6 to 8 ins., 2-yr.	18.00
2000 Thuja Occ. Globosa, 6 to 8 ins., 2-yr.	20.00
4000 Thuja Occ. Globosa, 4 to 6 ins., 1-yr.	17.50
2000 Thuja Occ. Pyramidalis, 4 to 6 ins., 1-yr.	17.50

TERMS: NET CASH WITH ORDER; PACKING FREE

Orders will be filled in turn as received while our stocks last, subject to conditions beyond our control.

An order for 25 of the same variety and size sold at the 100 rate.

Minimum order, 100 plants.

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York and Roosevelt Roads
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NORWAY SPRUCE SEEDLINGS

Our soil and climatic conditions produce husky, well rooted seedlings.

	Per 100	Per 1000
2-year, 3 to 5-inch seedlings.	\$4.00	\$30.00
2-year, 5 to 7-inch seedlings.	5.00	40.00

Seedlings can be shipped same day order is received.

Write for complete Trade List.

EVERGREEN NURSERY CO.

Established 1864

Sturgeon Bay, Wis.

TAXUS MEDIA HALLORAN

The past winter proved this variety to be very well adapted for the middle western climate. We have 1, 2 and 3-year liners to offer.

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J & P

EVERGREENS
SHADE TREES

In good assortment.

Jackson & Perkins Co.
NEWARK,

SHRUBS, VINES
HEDGE PLANTS, etc.

NEW YORK STATE

Our Catalog is now available
upon request.

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Wholesale growers of nursery stock.

Route 19, 31 miles north of Pittsburgh, Pa.
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POTTED LINERS

GRAFTS

(Beetle Certified)

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CHINESE CHESTNUT TREES

Blight-resistant.

TREES—TRANSPLANTS—LINERS

THE GOLD CHESTNUT NURSERY

Cowan, W. Va.

EVERGREENS

Seedlings and Transplants

Fall, 1949

Write for price list.

SUNCREST EVERGREEN NURSERIES

JOHNSTOWN, PA.

Coming Events

MEETING CALENDAR.

May 15 to 17, Georgia State Nurserymen's Association, Jekyll Island.

May 19 to 21, Louisiana Horticultural Association, Roosevelt hotel, New Orleans.

May 22 to 24, Florida Association of Nurserymen, George Washington hotel, Jacksonville.

May 25 to 28, Western Shade Tree Conference, Hotel Senator, Sacramento, Calif.

June 10 and 11, Alabama State Nurserymen's and Florists' Association, Whitney hotel, Montgomery.

June 19 and 20, Mississippi Florists' and Nurserymen's Association, Hotel Buena Vista, Biloxi.

July 7 and 8, nursery and landscape management conference, Michigan State College, East Lansing.

July 17 to 21, American Association of Nurserymen, Fairmont hotel, San Francisco, Calif.

August 8 and 9, National Mail Order Nurserymen's Association, Hotel La Salle, Chicago, Ill.

August 11 and 12, Indiana Association of Nurserymen, Morton Arboretum, Lisle, Ill.

August 19 and 20, West Virginia Nurserymen's Association, Tygart hotel, Elkins.

August 22 to 24, Texas Association of Nurserymen, Driskill hotel, Austin.

August 24 to 26, Southern Nurserymen's Association, Hotel Patten, Chattanooga, Tenn.

September 13 to 15, California Association of Nurserymen, Santa Barbara.

PLAINS NURSERYMEN PLAN.

A meeting of the board of directors at 9 a. m. is the first event scheduled for the third annual convention of the Plains Nurserymen's Association to be held May 17 at the Aggie Memorial Auditorium, Texas Technological College, Lubbock, Tex.

Registration will follow the board meeting, and the afternoon session will be devoted to lectures on landscaping, insect and disease control and soils, a business meeting and election of officers. In the evening, the nurserymen at Lubbock will be hosts at a barbecue at McKenzie state park.

DAY LILY GROUP PLANS.

The fourth annual meeting of the Hemerocallis Society will be held June 25 at Bartlesville, Okla., in conjunction with the regional day lily show June 25 and 26 in the gardens of F. E. Rice and D. R. McKeithan, where approximately 300 varieties of hemerocallis will be in bloom.

The business meeting will be at 11 a. m. at the Hotel Burlingame, Bartlesville. After a luncheon, Geddes Douglas and Sam Y. Caldwell

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MODERN... SCIENTIFIC... BEAUTIFUL LATH HOUSE

Improve Your Nursery**Increase Your Profits**

ALUMALATH modernized thousands of nurseries last year. These nurseries, large and small, found Alumalath gave more uniform protection, greatly improving plant growth PLUS adding to their profits when they sold Alumalath. There's a two-way gain: 1. Have your own Alumalath house; 2. Sell Alumalath.

ALUMALATH slats, stringers and clips are of high-quality aluminum, light-weight . . . will not warp, burn or change form regardless of weather. Slats have a beautiful, high-gloss baked enamel finish.



Alumalath House.

Modern . . . Strong . . . Durable . . . Panel Construction Without Nails

ALUMALATH nurseries find that their added beauty and modern appearance attract new trade and their customers are big buyers of Alumalath for many home uses such as playhouses, patio shading, porch shading, large or small lath houses and trellises. WE HAVE RECENTLY ADDED A BEAUTIFUL, MODERN ALUMALATH AWNING TO OUR LINE.

Be modern . . . Improve your property. Help your customers to enjoy outdoor living with Alumalath . . . and you profit both ways.

SOME EXCLUSIVE TERRITORIES FOR DISTRIBUTORS STILL OPEN. Liberal discount to dealers. Delivery F.O.B. New York or California. WRITE TODAY FOR DETAILS AND LITERATURE. SEND A SKETCH OF YOUR NURSERY REQUIREMENTS (10 feet or 10 acres), AND ADVISE THE TERRITORY YOU COVER.



Alumalath House and Patio Shading.

HARRY H. REYNOLDS

2561 Valencia St.

Santa Ana, California

will give talks. A dinner at the Hillcrest Country Club will be followed by a social hour.

The gardens of Mr. Rice and Mr. McKeithan will be open to visitors June 26. Tours also have been arranged through the nationally known Woolaroc lodge and museum, where a fine collection of paintings and Indian relics may be seen.

NURSERY CONFERENCE.

Soils and nutrition will be the theme of the annual nursery and landscape management conference to be held July 7 and 8 at Michigan State College, East Lansing. Many phases of soil problems and plant growth will be discussed by the speakers.

A SMALL nursery has just been started by Donald T. Midyette, 813 Chattawka lane, New Bern, N. C.

WONDERFUL spring business is being enjoyed by the nurserymen in his area, reports Howard C. Taylor, proprietor of the Rosedale Nurseries, Eastview, N. Y., and president of the American Association of Nurserymen. While the final results are still to be learned, his firm is enjoying what at present looks like the biggest spring business ever.

MAGNOLIAS

For immediate delivery we offer Magnolia grafts from 2 $\frac{1}{4}$ -inch pots at \$75.00 per 100; \$70.00 per 100 in lots of 500 or over.

Varieties: Soulangiana and soulangiana nigra.

HESS' NURSERIES

Mountain View, N. J.

EVERGREENS**Northern-grown**

Canadian Hemlock
American Arborvitae
Balsam Fir

	Per 100	Per 1000
2 to 4 ins., sdgs.....	\$0.80	\$ 5.00
3 to 6 ins., sdgs.....	1.50	10.00
6 to 9 ins., sdgs.....	2.50	15.00
9 to 12 ins.....	6.00	40.00
12 to 18 ins.....	8.00	65.00

Freshly collected. Well rooted. Puddled and packed in sphagnum moss. Catalog of plants, ferns, etc., on request.

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We Offer—

EVERGREENS — In a large assortment of PYRAMIDAL and GLOBE ARBORVITAE, PFITZER JUNIPER and YEWS in grades at attractive prices. SOME LARGE SPECIMEN EVERGREENS, SHRUBBERY and SHADE TREES.

Mail want list for prices.

THE WESTMINSTER NURSERIES
Westminster, Md.

QUALITY LINERS

Canadian Hemlock	Per 100
6 to 12 ins., transplants (4-yr.)	\$15.00
White Pine	
6 to 12 ins., transplants (4-yr.)	12.50
Hicks' Upright Yew	
9 to 12 ins., heavy.....	35.00

Send for new Spring List.

POSSUM HOLLOW NURSERIES
6327 Magnolia St.
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AMERICAN ASSOCIATION OF NURSERYMEN

RICHARD P. WHITE,
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WASHINGTON 5, D. C.

DEADLINE FOR SPECIAL TRAIN RESERVATIONS.

May 15 has been set as the deadline for reservations for space on the special trains going to the convention of the American Association of Nurserymen at San Francisco next July. The transportation chairman, William J. Smart, Dundee, Ill., reports that all payments for space already reserved must be made by June 1. About 300 actual reservations have been made.

Statements will be mailed out shortly for the balance of the fare due from persons who have made deposits on reservations for space. Mr. Smart would appreciate prompt payment so that he can order the tickets mailed direct to the passengers and avoid the last-minute rush.

All persons planning to travel on the special trains should supply Mr. Smart with the full names of members of their families or other persons traveling with them, so that a complete roster can be compiled of individuals aboard each train.

A. A. N. REGISTRATION OF NEW WOODY PLANTS.

The registration of new woody plants, originated or introduced into the United States since 1930, exclusive of fruits and roses, has been undertaken by the American Association of Nurserymen to answer the need for a complete listing, since up to the present no formal registry of woody plants has been maintained. However, fruit trees that have ornamental value will be registered by the A. A. N. The registration is intended to reduce the possibility of other clones becoming confused with an original introduction and sold under its name.

Nurserymen who have originated or introduced woody plants since 1930 are asked to write for registration cards, fill them out and mail them to the American Association of Nurserymen, 636 Southern building, Washington 5, D. C.

One hundred fifty-two woody plants previously registered with the A. A. N. have already been described in earlier issues. Additional registrations follow:

No. 153. Azalea Red Progress. Hybrid of Rhododendron (Azalea) sanderi and the Kurume Azalea Hinomayo, originated by R. de Wilde, Jr., at Shiloh, N. J., in 1939 and introduced by de Wilde's Rhodo-Lake Nurseries, Shiloh, N. J., in 1947. This variety has flowers one and one-half times as large as A. Hinodegiri. The flower color is red, but more translucent than A. Hinodegiri. Growth is more vigorous, but habit at maturity is similar to A. Hinodegiri. It is hardy wherever A. Hinodegiri is hardy and has the same adaptations to soils as other azaleas. Registered by Roland de Wilde, Jr., de Wilde's Rhodo-Lake Nurseries, Shiloh, N. J.

No. 154. Azalea May Glory. Hybrid of Rhododendron (Azalea) sanderi and the Kurume Azalea Hinomayo, originated by R. de Wilde, Jr., at Shiloh, N. J., in 1939 and introduced by de Wilde's Rhodo-Lake Nurseries, Shiloh, N. J., in 1948. This variety has flowers one and one-half times as large as A. Hinodegiri; flower color is red like A. Red Progress, but blooming date is about seven to ten days later than A. Red Progress, but before any new growth appears. The habit is somewhat lower and more spreading than A. Red Progress; foliage is more persistent. A vigorous grower, it is hardy wherever A. Hinodegiri is hardy. Registered by Roland de Wilde, Jr., de Wilde's Rhodo-Lake Nurseries, Shiloh, N. J.

No. 155. Azalea Pink Progress. Hybrid of Rhododendron (Azalea) sanderi and the Kurume Azalea Hinomayo, originated by R. de Wilde, Jr., at Shiloh, N. J., in 1941 and introduced by de Wilde's Rhodo-Lake Nurseries, Shiloh, N. J., in 1949. This variety has clear pink flowers much larger than Azalea Hinomayo. Growth habit is more compact, but the plant is a vigorous grower. Buds show good resistance to late spring frosts. The variety is harder than A. Hinodegiri or A. Hinomayo and is adapted to the same soils and locations as other azaleas. Registered by Roland de Wilde, Jr., de Wilde's Rhodo-Lake Nurseries, Shiloh, N. J.

No. 156. Malus Gloriosa. Hybrid of Malus scheideckeri and M. pumila Niedzwetskyana, originated at Lemoines Nursery prior to 1931; originated by V. Lemoines & Son, Nancy, France, and introduced in the United States by the Arnold Arboretum, Jamaica Plain, Mass., in 1936. The leaves are purplish-red, the flowers purplish-red, with the fruit bright red and one inch in diameter. Hardy in zone 4. Registered by Donald Wyman, horticulturist, Arnold Arboretum, Jamaica Plain, Mass.

No. 157. Columnar European Aspen, Populus tremula columnaris. Seedling of Populus tremula, introduced into the United States by the Arnold Arboretum, Jamaica Plain, Mass., in 1939. This is merely the columnar form of the European aspen obtained originally from the Botanic Garden of Goteborg, Sweden. Hardy in zone 4. Registered by

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Donald Wyman, horticulturist, Arnold Arboretum, Jamaica Plain, Mass.

No. 159. Cumberland Azalea. Rhododendron (*Azalea*) cumberlandense. Species Rhododendron (*Azalea*) cumberlandense, which is a native of Cumberland plateau in Kentucky. This was discovered probably in 1931 by J. K. Small and introduced by C. G. Bowers, Maine, N. Y., in 1938. This azalea has brilliant red flowers appearing five to six weeks after the leaves, corolla three and one-half to four centimeters broad, stamens carmine and nearly glabrous. Questionable hardiness in zone 5. Registered by Donald Wyman, horticulturist, Arnold Arboretum, Jamaica Plain, Mass.

No. 160. Cut-leaved Black Walnut. Seedling of *Juglans nigra*, originating at the state nursery, Milton, Pa., and introduced by J. W. Hershey, Downingtown, Pa., in 1937. The leaves are bipinnate and finely dissected, resembling *Rhus typhina* *dissecta* somewhat in the shape of its foliage. Hardy in zone 4. Registered by Donald Wyman, horticulturist, Arnold Arboretum, Jamaica Plain, Mass.

No. 161. Witch Hazel. *Hamamelis intermedia*. Hybrid of *Hamamelis mollis* and *H. japonica*, originating at the Arnold Arboretum in 1936 and introduced by the Arnold Arboretum in 1936. Plants are intermediate in their characters between *H. mollis* and *H. japonica*, both in size and shape of leaves, leaf pubescence, flower size and color. Many of the hybrid seedlings have reddish flowers. Hardy in zone 5. Registered by Donald Wyman, horticulturist, Arnold Arboretum, Jamaica Plain, Mass.

No. 161. Eca Rose. *Rosa ecae*. Species *rosea*. *Rosa ecae*, was introduced by the Arnold Arboretum, Jamaica Plain, Mass., into the United States in 1937. The true *Rosa ecae* was not introduced into America until 1937, although another species had been here under that name for many years. *Rosa ecae* is a shrub, 8' high, five to nine leaflets, flowers single, one-half to three-quarters inch in diameter, dark yellow. Hardy in zone 5. Registered by Donald Wyman, horticulturist, Arnold Arboretum, Jamaica Plain, Mass.

No. 162. Aromatic Sweetbrier Rose. *Rosa glanteria duplex*. Introduced in the United States by the Arnold Arboretum, Jamaica Plain, Mass., in 1938. An old rose in Europe, apparently either not introduced or "lost" in this country until 1938 when introduced from Holland. Flowers double, pink, two inches in diameter (H.C.C. 628/2 to 628/1). Hardy in zone 4. Registered by Donald Wyman.

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horticulturist, Arnold Arboretum, Jamaica Plain, Mass.

No. 163. Knop Hill Scarlet Oak, Quercus coccinea splendens. Seedling of Quercus coccinea, originating at Knop Hill sometime before 1924 by the Knop Hill Nursery, Woking, Surrey, England; introduced in the United States by the Arnold Arboretum, Jamaica Plain, Mass., in 1937. It is a form of the species with the best autumn color under English growing conditions. Hardy in zone 4. Registered by Donald Wyman, horticulturist, Arnold Arboretum, Jamaica Plain, Mass.

No. 164. Arnold Pyramid Hemlock. Seedling of Tsuga caroliniana, originated at the Kelseys-Highlands Nursery, East Boxford, Mass., in 1938 and introduced by the Arnold Arboretum, Jamaica Plain, Mass., in the same year. It has a dense and pyramidal form of the species; not very compact. The plant is only half as rapid in growth as the species. Hardy in zone 4. Registered by Donald Wyman, horticulturist, Arnold Arboretum, Jamaica Plain, Mass.

No. 165. Judd Cherry, Prunus Juddi. Hybrid of Prunus yedoensis and P. avium, designated as P. Juddi, originated at the Arnold Arboretum, Jamaica Plain, Mass., in 1933 and introduced by the Arnold Arboretum in the same year. Leaves brownish when unfolding, flowers flushed pink, two to four short peduncled racemes. Excellent deep pink when flowers fully open. Tree with broad top. Hardy in zone 4. Registered by Donald Wyman, horticulturist, Arnold Arboretum, Jamaica Plain, Mass.

No. 166. Schmitti Cherry, Prunus schmittii. Hybrid of Prunus canescens and P. avium, designated as P. schmittii, originated at the Arnold Arboretum in 1932 and introduced by the Arnold Arboretum in that year. It is a small tree, leaves elliptic-oblong, five to eight centimeters long, acuminate, glabrescent above, pubescent chiefly on veins beneath; petiole one to two and one-half centimeters long; pedicels one to one and one-half centimeters long, calyx campanulate, petioles broad oval. Bark a lustrous reddish color. Hardy in zone 4. Registered by Donald Wyman, horticulturist, Arnold Arboretum, Jamaica Plain, Mass.

No. 167. Columnar Sargent Cherry, Prunus sargentii columnaris. Seedling of Prunus sargentii, originated at the Arnold Arboretum in 1932 and introduced by the Arnold Arboretum, Jamaica Plain, Mass., in 1942. It is a columnar form of P. sargentii. Hardy in zone 4. Registered by Donald Wyman, horticulturist, Arnold Arboretum, Jamaica Plain, Mass.

No. 168. White Bumalda Spirea, Spiraea bumalda alba. Hybrid of Spiraea japonica and S. albiflora, originating at Chenault's Nursery (?) prior to 1937 and introduced to the United States by the Arnold Arboretum, Jamaica Plain, Mass., in 1937. It is similar to S. bumalda, but has white flowers. Since this species is a hybrid, this plant is a clone. Hardy in zone 4. Registered by Donald Wyman, horticulturist, Arnold Arboretum, Jamaica Plain, Mass.

No. 169. Redberry American Elder, Sambucus canadensis rubra. Originated at Smith College prior to 1932 and introduced by A. P. Wezel, of Smith College, and the Arnold Arboretum in 1932. The plant has characteristics similar to those of S. canadensis, the American elder, except that the fruit is red. Hardy in zone 4. Registered by Donald Wyman, horticulturist, Arnold Arboretum, Jamaica Plain, Mass.

No. 170. Crab Apple Prince Georges. Hybrid of Malus ioensis plena and M. angustifolia, originated at Glenn Dale, Md., in 1932 by the United States Department of Agriculture and introduced by the Arnold Arboretum, Jamaica Plain, Mass., in 1943. The flowers have more petals, and the leaves are narrower than those of M. ioensis plena. Apparently not troubled by diseases that attack M. ioensis. Hardy in zone 4. Registered by Donald Wyman, horticulturist, Arnold Arboretum, Jamaica Plain, Mass.

No. 172. Crab Apple Dorothea. Hybrid between Malus halliana parkmanii and M. arnoldiana, originated at the Arnold Arboretum, Jamaica Plain, Mass., May 17, 1943, and introduced by the Arnold Arboretum in 1948. The plant has large, double, pale pink flowers, two inches in diameter. Eleven to sixteen pale crimson to Tyrian-rose petals (H.C.C. 22/1 to 24/2). Flowers do not fade. Fruit one-half inch in diameter and golden-yellow. One of the few double-flowering crab apples which also bear fruit. Hardy in zone 4. Registered by Donald Wyman, horticulturist, Arnold Arboretum, Jamaica Plain, Mass.

No. 173. Flowering Crab Katherine. Hybrid of Malus halliana parkmanii and possibly M. baccata, originated at Durand Eastman park, Rochester, N. Y., and discovered by B. H. Slavin in 1943. Introduced by the

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sides of sepals and petals. Flowers are pinkish; this is another one of the better deutzias, in the opinion of the Arnold Arboretum. Hardy in zone 5 and usually hardy in zone 4. Registered by Donald Wyman, horticulturist, Arnold Arboretum, Jamaica Plain, Mass.

No. 179. *Philadelphus Innocence*. Hybrid of *Philadelphus microphyllus* and *P. coronarius*, originating at Lemontes Nursery, Nancy, France, in 1927 and introduced in the United States by the Arnold Arboretum, Jamaica Plain, Mass., in 1932. Flowers single, one and one-half inches in diameter, four to six petals, eight to ten flowers in dense clusters, fragrant. Hardy in zone 5 and usually hardy in zone 4. Registered by Donald Wyman, horticulturist, Arnold Arboretum, Jamaica Plain, Mass.

No. 180. *Syringa speciosa*. Hybrid of *Syringa reflexa* and *S. sibirica*, originated at Hesse Nurseries, Weener-Ems, Germany, prior to 1935 and introduced in the United States by the Arnold Arboretum, Jamaica Plain, Mass., in 1936. The flower panicle is eight by six inches, pyramidal, loose and open. Flowers open deep pink, soon fading white, but they do not have the purplish tinge of many *S. prinstoniae* varieties. Hardy in zone 4. Registered by Donald Wyman, horticulturist, Arnold Arboretum, Jamaica Plain, Mass.

No. 181. Japanese Flowering Cherry *Hally Jolivette*. Hybrid of *Prunus subhirtella* and *P. apetala*, originated at the Arnold Arboretum in 1940 and introduced by the Arnold Arboretum in 1948. This is a small tree of subhirtella type with small semidouble flowers which have dark centers and white outer petals. Blooming period extends over a long period, ten to twenty days. Hardy in zone 5. Does well on various types of soil. Registered by Karl Sax, Arnold Arboretum, Jamaica Plain, Mass.

No. 182. Arnold Dwarf Forsythia. Hybrid of *Forsythia intermedia* and *F. japonica*, originated at the Arnold Arboretum in 1939 and introduced by the Arnold Arboretum in 1946. This is a dwarf spreading forsythia, which roots from spreading branches to make a good ground cover. Leaves are about one inch long. Produces no flowers. Usable as a ground cover only. Hardy in zone 5. Adaptable to various types of soil. Registered by Karl Sax, Arnold Arboretum, Jamaica Plain, Mass.

No. 183. Lilac Alice Eastwood. *Syringa vulgaris* seedling of unknown parentage discovered at San Jose, Calif., April 5, 1940, and introduced by the California Nursery Co., Niles, Calif., in 1943. Discovered by W. B. Clarke, W. B. Clarke & Co., San Jose. Flowers double. Flower spikes long, slender, of highly unusual form. Stems show conspicuously. Flowers are not crowded in thryse. Flower color, deep cyclamen-purple (H.C.C. 30/3). Hardy in zone 3. Registered by Walter B. Clarke, W. B. Clarke & Co., San Jose, Calif.

No. 184. Lilac Blue Hyacinth. Seedling of *Syringa vulgaris* of unknown parentage discovered by W. B. Clarke, W. B. Clarke & Co., San Jose, Calif., April 1, 1939, and introduced by the California Nursery Co., Niles, Calif., in 1943. Single flowers decidedly unusual in form. The corolla lobes are long and strongly reflexed, giving the flowers a strong resemblance to those of a hyacinth. Early-blooming. Hardy in zone 3. Registered by Walter B. Clarke, W. B. Clarke & Co., San Jose, Calif.

No. 185. Lilac Kate Sessions. Hybrid of *Syringa vulgaris* and *S. oblata*, originated by W. B. Clarke, W. B. Clarke & Co., San Jose, Calif., and selected on April 1, 1937. Introduced by the California Nursery Co., Niles, Calif., in 1943. This is an extremely early single lilac; it has large clusters of flowers with florets often one and one-quarter inches wide. Buds purple; open florets deep blue (H.C.C. campanula-violet 37/2). Hardy in zone 3. Registered by Walter B. Clarke, W. B. Clarke & Co., San Jose, Calif.

No. 186. Lilac Esther Staley. Seedling of *Syringa vulgaris* Mme. L. Morel, originated and selected by W. B. Clarke, W. B. Clarke & Co., San Jose, Calif., April 15, 1941, and introduced by the Wayside Gardens Co., Mentor, O., in 1949. Plant patent No. 768 granted December 16, 1947, assigned to W. B. Clarke & Co. A single-flowering lilac, pink in color (H.C.C. Neyron-rose 623/2). Buds nearly red. Registered by Walter B. Clarke, W. B. Clarke & Co., San Jose, Calif.

STARTED last autumn, the wholesale and retail Franklin Canyon Nursery, Martinez, Calif., is owned by Benjamin Colombo and Joseph Frades.

OPENING of a new flower shop at Las Vegas, N. M., by the Tree Service Association, Las Vegas, has been announced by Paul B. Gensemer, Jr.

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1 1/16 and 9/16-in.
Peach, 5/16 up to 9/16-in.

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SOUTHWESTERN NOTES.

J. E. Bowman, Amarillo, Tex., has sold the Bowman Nursery Co., Amarillo, to Zack McCrady, who will retain the firm name. Mr. Bowman will continue in the nursery business, using the name and address, Rose Hill Nursery, Box 3505 Canyon road, Amarillo.

The J. M. Hedges Co., Coffeyville, Kan., was low bidder for a roadside improvement project in Harvey county, Kansas. The firm entered a bid of \$3,851.

The Deer Landscape Co., Neodesha, Kan., was awarded the roadside improvement job in Wilson county, Kansas. The firm bid \$5,094 on the project.

About twenty-five members of the Kansas City Association of Nurserymen met April 12 at the Wagon Wheels restaurant at Overland Park, Kan., for a chicken dinner. A color film showing activities at the Clover-set Flower Farm, Kansas City, Mo., followed the dinner.

Herbert O. Schrepel, Schrepel Landscape Service, Great Bend, Kan., was elected councilman of Great Bend at an election April 5.

Emmett Blood, orchardist and nurseryman near Wichita, Kan., was interviewed by the Kansas City Star for an article which appeared on April 19. When asked to estimate the prospects for a good peach crop in the Wichita district, Mr. Blood said, "It appears now that the Wichita district will produce another good peach crop; however, we will not start putting our peaches into the baskets until about July 1. Something out of the ordinary might nip the crop before that time." In addition to peaches, all the orchardists have some apple, pear, plum, apricot and cherry trees, and all predict a good fruit year.

J. J. P.

NEW PLANT PATENTS.

The following plant patents were issued recently, according to Rummel, Rummel & Snow, Chicago patent lawyers:

No. 830. Cydonia plant. John J. Grullemans, Painesville, O. A variety of cydonia plant, characterized by its upright columnar growth, the large size and attractive color of its buds and blossoms and its relatively sparse and short lateral branches, which expose the blossoms well from the crown substantially to the ground.

No. 831. Lilac plant. Walter Bosworth Clarke, San Jose, Calif., assignor to W. B. Clarke & Co., San Jose, Calif. A new and distinct variety of Syringa vulgaris, or lilac plant, being characterized by the dark rose-mauve coloring of its buds and the distinctive amaranth-pink of the full-blown flowers, its abundant floriferousness, its vigorous growth and early blooming habit.

No. 832. Lilac plant. Walter B. Clarke, assignor to W. B. Clarke & Co., San Jose, Calif. A new and distinct variety of Syringa vulgaris plant, being characterized by the large size of its individual flowers, the deep purple color of the bloom, the deep, almost black-purple coloring of the buds, the large and usually unforked clusters of bloom and its early period of blooming.



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Centennial Theme in California Show

In keeping with the California centennial, the California spring garden show, held April 26 to May 1 at Exposition Auditorium, Oakland, featured flowers which were popular 100 years ago. The setting of the show was taken from Georgetown, Va., with reproductions of cabins, a church and a cemetery. A waterfall with four cascades flowed through many of the exhibits, and a tropical ravine with native trees and orchids also was part of the setting.

Good lighting effects gave spectators the impression that they were in one of the redwood forests in northern California. The centennial effects formed a background for all the exhibits.

East Bay Nursery, Berkeley, displayed a mass of banked azaleas and ferns, each plant plainly labeled. The University of California exhibited a botanical garden of exotic plants. Among these was the Chinese redwood, which is closely related to the giant redwoods of California and which had been known only in fossil form until a few years ago. A group of these trees found growing in an isolated spot somewhere in central China is the source of seeds for this tree, and the university is assisting in the distribution of seeds and seedlings throughout the state. The tree is said to be superior in some respects to the California redwood.

Gomes Nursery, Oakland, contributed a large rhododendron display which could be seen from nearly every part of the floor. N. W. Curson, Albany, and H. F. Galbraith combined in presenting one of the outstanding orchid displays, giving the illusion that the orchids were growing in their native habitat by including exotic ferns and simulated tropical trees with stuffed tropical birds in them.

H. Plath & Sons, Inc., San Francisco, displayed banks of succulent plants in a corner, using individual potted plants from two inches to three feet in height. Carbone Orchids received a special award for an exhibit with the greatest number of new kinds or varieties of orchids.

Avansino-Mortensen & Co., San Francisco, exhibited a colorful display of massed anthuriums. Included were various colored hybrids which the firm has developed in the past few years, as well as the conventional red and white anthuriums. The massing was in the form of a ravine with a simulated stream running between the flowers. This stream was made up of

African violets, many of them also new hybrids being developed at the firm's greenhouses at San Lorenzo.

Another special award for the greatest number of new varieties exhibited went to Martin & Overlach, San Francisco. The exhibit contained rhododendrons of all colors, sizes and shapes. In the foreground were individual potted plants of the same kinds that made up the background; each plant was labeled. The Berkeley Horticultural Nursery, Berkeley, displayed a large, informal hillside planting of many kinds of native plants, with azaleas predominating. The California Nursery Co., Niles, had an effective display of bulbs in flower.

Szody's Nursery, Berkeley, featured German iris and double petunias in beds and pots as a colorful foreground for native and imported evergreens. Peter Valinga, San Francisco, presented his usual attractive bulb dis-

play. Tulips, narcissi and hyacinths provided color, and there also were smaller, less prominent groupings of the lesser known flowering bulbs. The display stood before an old church and gave the realistic effect of a cemetery, but did not create a depressing atmosphere. The Irwin E. Speed Nursery, Oakland, used calceolarias in flower in pots to decorate a corner effectively.

A large, old-fashioned rock garden with a rapidly flowing stream comprised the exhibit of Montclair Nursery, Oakland. R. M. McRae and Ernest Matthews, Atherton, showed what could be done with a simple, homelike, informal garden of annuals. John Aitken's pansy bed demonstrated how masses of these flowers could make a springtime spot of beauty and showed how many different kinds of pansies and violas are available.

Outdoor displays of rhododendrons

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were featured in the exhibit of Flowerland Nursery, Albany. Used with these were annuals and perennials. The focal point was a slowly rippling waterfall. Burr-Christian Nursery, Hayward, used hydrangeas, maidenhair ferns in pots and azaleas in a display, while Waltz Gardens, Ross, displayed a hillside rock garden with water at the base of the hill. Students studying horticulture at the City College of San Francisco built a pool containing a few lilies and fish and arranged a planting of rhododendrons, azaleas and bulbs, all in flower, on the sides of the pool.

Among the most attractive outdoor gardens was an aisle of tree roses, all in bloom. One side of the aisle was contributed by East Bay Nursery, Berkeley, and the other by Crombie Nursery, Oakland. Orchard Nursery & Supply, Lafayette, displayed an outdoor garden with a background of a large room with glass walls, furnished for ease and for the enjoyment of the formal garden. Ernest Wetheren, the designer of this exhibit, used many pink-flowering dogwoods to accentuate its high points.

The rose gardens of Stocking's Rose Nursery, San Jose, won several blue ribbons. Among the awards was one for the greatest number of new kinds of roses and the greatest number of plants in an exhibit. The rose garden was semicircular and backed up against a brick wall. Several paths ran through it.

The highest award for the best designed garden went to the formal garden of McDonnell Nursery, Oakland. Osmundsen & Staley designed the garden. The background was a patio built on the side of a modest home. It was furnished with modern garden furniture. Stretching out from it was a beautiful, well kept lawn with a shallow pool in the center. Shrubs, a barbecue pit and flowering plants completed the exhibit. W. B. B.

DR. VERDOORN LEAVES LOS ANGELES ARBORETUM.

Dr. Frans Verdoorn, who had been director of the Los Angeles State and County Arboretum, at Arcadia, near Pasadena, Calif., since last autumn, returned to his editorial work with Chronica Botanica, Inc., at Waltham, Mass., April 15.

With deep regret the trustees of the California Arboretum Foundation, Inc., accepted his resignation on completion of the initial organizational phase in the development of the arboretum. Its office, its library and the Southern California Horticultural Center have been established, and

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preliminary landscaping plans, by Architect Bent, have been completed, and a biological survey of the arboretum area is well under way.

Dr. Verdoorn will continue to serve the arboretum as a councilor.

Pending the appointment of a new director, William Hertrich, curator emeritus of the Huntington Garden and a member of the arboretum board of trustees, will supervise horticultural activities. Howard Miller, of the Los Angeles chamber of commerce, will supervise the general office, and Mrs. Richard Dakin, the historical reconstruction work.

George Spalding, propagator at the arboretum, has been appointed acting superintendent.

SAN JOAQUIN MEETING.

In a talk entitled "Your Nursery and the California Agricultural Extension Service," given at the April meeting of the San Joaquin Valley chapter of the California Association of Nurserymen, C. E. Scott, department of plant pathology, University of California, Berkeley, outlined in detail the extension service's work on crown gall, nematodes and other plant diseases pertaining to nursery operations.

Mr. Scott explained that as an extension specialist he acts as an intermediary between research divisions and county farm advisers, passing ideas and information between field representatives and the universities and laboratories.

In addition to Mr. Scott, guests at the meeting included A. D. Rizzi, extension specialist in deciduous fruits, Dr. Stephen Wilhelm and H. T. Pyfrom, department of plant pathology, University of California, Berkeley, and Sheldon Jackson, assistant farm adviser in Merced county, all members of the California agricultural extension service.

The next meeting of the group will be May 19 at Fresno.

Virgil Cripe, Sec'y.

AZALEAS FOR
NORTHERN GARDENS.

[Continued from page 8.]

Rhododendron gandavense: Since 1825, when the first Ghent azaleas were originated in Belgium, many varieties have appeared with mixed parentage. One of the parents most used has been the European Rhododendron luteum, frequently crossed with American species or hybrids. The colors of the flowers of this hybrid group range from white through yellow and orange to deep crimson, with many combinations.

Some of the varieties have single flowers, others double. They vary in hardiness, depending upon the parentage, but some varieties have withstood -20 degrees Fahrenheit in central Maine. These are *Narcissiflora*, *Coccinea Speciosa*, *Nancy Waterer*, *Unique*, *Minerva*, *Bouquet de Flore* and *Raphael de Smet*.

Some good varieties which have proved hardy in the climate of Boston, with the colors according to the English Horticultural Colour Chart, are:

Altaclarens—orange-yellow.

Beaute Celeste—scarlet.

Bijou des Amateurs—dawn-pink (523).

Charlemagne—Chinese coral (614) to orange (12), prominent stamens—flowers two inches in diameter.

Coccinea Speciosa—Saturn red (13—13/1) filaments red, flowers one and five-eighths inches in diameter.

Comte de Flanders—carmine (21).

Cymodoce—dawn-pink (523)—with orange markings, flowers two and one-half inches in diameter.

Daviesi—white, blotched yellow.

Flamboyant—orange.

Fuerst Camille von Rohan—bud chrome-yellow; flowers white with yellow markings, flowers two and one-eighth inches in diameter.

General Trauff—rose-shaded orange.

Gloria Mundi—fire-red (15/1) upper petal orpiment-orange, flower two inches in diameter.

Heureuse Surprise—white, shaded rose.

Irene Koster—dawn-pink (523/1-523/3) with prominent yellow markings.

Nancy Waterer—yellow.

Pallas—jasper-red (18-18/2) with markings of Indian-yellow on upper corolla, flower one and three-quarters inches in diameter.

Pucelle—Neyron-rose (623/3) with cadmium-orange markings, flowers two inches in diameter.

Unique—bronze.

Flowers Double:

Bijou de Gandbrugge—white, flushed pink.

Graf von Meran—Neyron-rose (623/3) and white in center.

Narcissiflora—sulphur-yellow (1).

Raphael de Smet—white, flushed pink.

Souvenir de President Carnot—cadmium-orange (8-8/2) and brick-red (016), flowers one and one-half inches in diameter.

Rhododendron japonicum: This Japanese azalea should not be overlooked because of its large orange to salmon-red flowers that are two

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to three inches in diameter. It is as hardy as any, grows about six feet tall and is profuse in its production of flowers. It must be noted and always remembered that the flowers do have an obnoxious odor (somewhat similar to that of the skunk) and so should not be used in plantings near the house. However, many fine hybrids owe their hardiness and large flowers to this plant as a parent, and in many cases the odor is not inherited.

Rhododendron kosterianum: The Molli hybrids grow to about five feet high, are hardy in zone 5 and are mostly crosses of the tender Chinese *R. molle* and *R. japonicum*. The flowers are large, yellow to red, with many combinations of colors. Miss Louise Hunnewell is perhaps the most famed of these hybrids, but it is rather difficult to find the true variety in modern nurseries. The difficulty arose because many nurserymen, finding asexual propagation of this splendid variety difficult, resorted to growing it from seeds. When sexually reproduced seedlings were given the varietal name, it was not long before the true variety became lost. Some of the better varieties now are:

C. B. Van Nes—flowers fire-red.
Comte de Gomer—flowers soft red.
Comte de Papadopoli — flowers rose, shaded orange.

Comtesse de Kerchove — flowers pale pink or orange.

Consul Ceresole — flowers porcelain-rose (620/1), flowers three and one-half inches in diameter.

Hugo Koster — flowers poppy-red (16/2) with orange markings; two and three-quarters inches in diameter.

Miss Louise Hunnewell — flowers orange-yellow (7); three inches in diameter.

Otto Lilenthal — flowers ivory-white.

Phidias — flowers double, light pink and yellow.

Snowdrift — flowers white.

Rhododendron mucronatum: The popular Snow azalea, the hardiest of the evergreen azaleas, is hardy on Cape Cod, but sometimes suffers winter injury in the Boston area. It is usually low in growth (about six feet or less) with white flowers two inches in diameter, but the grayish color of its foliage does not place it in the upper class of evergreens. The variety *narcissiflorum* has white double flowers, plenum has rose-purple double flowers and *amethystinum* has flowers pale lilac-purple spotted pink.

Rhododendron mucronulatum: A [Continued on page 47.]

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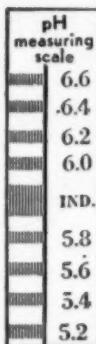
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During the past three years a powdery mildew of Oriental magnolia species has been observed in nurseries in the vicinity of Mobile, Ala. The disease is severe and almost universal in occurrence on leaves of Magnolia liliiflora and M. liliiflora variety nigra. It is much less severe on M. soulangeana and its varieties alba superba, alexandrina, lennei and rustica. Often no infection can be found on M. soulangeana growing beside M. liliiflora which is severely affected.

In an article, "Powdery Mildew of Oriental Magnolias," in the Plant Disease Reporter for April 15, D. L. Gill says that the division of mycology and disease survey of the United States Department of Agriculture answered an inquiry about the occurrence of powdery mildew on these magnolia species with the statement that the division had no record of occurrence on M. soulangeana and variety lennei, nor on M. stellata. Perithecia were found in late October, 1946, and the fungus was tentatively identified as Microsphaera alni. Verification was made by John A. Stevenson, of the division of mycology and disease survey, in 1947.

Nurserymen use copper sprays, usually Bordeaux mixture, to control the disease. Zerlate, one and one-half pounds to 100 gallons, did not produce as good control as Copper-A, four pounds to 100 gallons, applied to plants in adjoining beds. Sulphur has caused severe burning of the foliage on two occasions when applied by Mr. Gill and at least once when applied by a nurseryman. These cases of injury were not correlated with high temperatures.

DENNIS A. HUBBARD has started the Hubbard Nursery at Edmonds, Wash.

THE name of the Medalia Meekan Nursery, Winslow, Wash., has been changed to the Medalia Nursery, and the nursery has been moved to Seattle, Wash., according to Mrs. M. Medalia.

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WANTED—To design landscape plans for nurseries on a 10-per-cent-of-the-cost-of-material basis. Minimum fee, \$100. Send a rough sketch, giving exact dimensions, showing location of walkways, drives, windows, doors, etc. Will design a detailed planting plan to scale. H. J. BAKER, Landscape Architect, Crawfordville, Ind.

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SITUATION WANTED

Executive-type nurseryman thoroughly experienced in all phases of nursery procedure, production, wholesale and retail, and will consider desirable position with reliable concern. Experienced in drawing complete plans and directing work. Excellent sales personality plus broad experience makes a high caliber representative. Available soon. Personal data and business references upon request. Address Box 622, care of American Nurseryman.

FOR SALE— $\frac{1}{2}$ acres of good land, suitable for nursery or similar use, 150-ft. frontage on well traveled street at edge of fast-growing city in central California. 1,600 sq. ft. lathe; nicely landscaped. Comfortable 3-bedroom home, plenty of tile and cabinets in kitchen. Large 3-car garage; chicken house. Nice family orchard, variety of grapes, several large walnut trees. Selling because of age and ill health. Write: WALTER SPUEHLER, 2146 E. Fremont St., Stockton 41B, Calif.

FOR SALE—Well established landscape gardening and nursery business, excellent location, high-class clientele. South shore Long Island, N. Y. Fully equipped, including 1947 truck, Rototiller, tools, land for growing stock and business headquarters. Retiring. Write Box 618, care of American Nurseryman.

FOR SALE—Nursery, long-established profitable wholesale business, specializing in Mums, with nation-wide distribution. Two nearly new greenhouses, 4,600 sq. ft.; warehouse; garage; 4-room modern house; 4 irrigated acres; all necessary equipment. Write: BUSINESS OPPORTUNITIES, Inc., 600 Oak Grove, Minneapolis 2, Minn.

CLASSIFIED ADS.

25 cents per line.
Minimum order, \$2.00.

AZALEAS

LINING-OUT STOCK.

Grown in cool houses through the winter. Plants pinched back will have 3, 4 and 5 shoots and a vigorous root system with a good ball of peat. Can be lined out directly into open ground.

KAEMPFERI	KURUME
Atlanta	Hinodegiri
Carmen	Pink Pearl
Fedora	Snow
Ledifolia alba	\$150.00 per 1000.
\$175.00 per 1000.	

Place your order early.
KOSTER NURSERY
Bridgeton, N. J.

HARDY AZALEA LINERS.

Kaempferi—Fedor, Carmen, Louise, Mme. Butterfly, Atlanta. Also, Hinodegiri, Ledifolia alba. Well branched, 6 to 8 ins., \$55.00 per 100. Grown in special mixture producing lightweight ball and large root system. Spring delivery. No packing charge. Cash with order.

GREENSTOCK NURSERY

(Route 112, between Station and Coram)
Port Jefferson Station, L. I., N. Y.

AZALEA LINERS.

Coral Bells

Doubl. Mauve

Sweetheart Supreme

All good pot plant varieties; have been cut many times for this purpose. These plants can be made into some real nice 4-inch pot plants for fall potting.

\$10.00 per 100, \$90.00 per 1000.

Wholesale only.

BLACKWELL NURSERIES, SEMMES, ALA.

50,000 AZALEA TRANSPLANTS.
Indica alba, Mary, Hinodegiri, Alice, Ameena, Hinomayo, Flame, Purple King, mixed pink kaempferi.

Very heavy rooted.

14¢ each in 1000 lots; 16¢ each in 100 lots. Packing and shipping extra.

DEKALB NURSERIES, Inc.

Norristown, Pa.

AZALEA TRANSPLANTS.

Coral Bells, Pink Pearl, Ledifolia Alba, Sweet Briar, Orange Coral Bella. \$14.00 per 100, \$125.00 per 1000.

JOHN WIGMORE, Norman Ave.

Riverside Park, Riverside, N. J.

AZALEAS.

Thousands of beautiful plants in many varieties. Now booking orders for fall. Place your order early to avoid disappointment.

TANKARD NURSERIES

Exmore, Va.

AZALEAS—Well rooted cuttings. See page 34. Write for list.

MITSCH NURSERY Aurora, Ore.

BERRY PLANTS

CULTIVATED BLUEBERRY PLANTS—Rancocas, Rubel, Ogden, Jersey, 2-yr., 12 to 18 ins., \$25.00 per 100; 3-yr., 18 to 24 ins., \$30.00 per 100. New varieties: Weymouth, the leader, 2-yr., \$7.00 per doz.; New Atlantic, Pemberton, Burlington, 2-yr., \$7.00 per doz.; Burlington, 3-yr., \$1.25 ea., \$15.00 per doz. List sent. WARREN SHINN'S NURSERY, Woodbury, N. J.

STRAWBERRY PLANTS — The famous Campbell's Early, the earliest, bears early in May. \$2.00 per 100, \$6.00 per 500, \$12.00 per 1000. WARREN SHINN'S NURSERY, Woodbury, N. J.

CUMBERLAND RASPBERRIES. \$3.50 per 100, \$20.00 per 1000. WAYNESBORO NURSERIES Waynesboro, Virginia

BULBS AND TUBERS

TUBEROUS-ROOTED BEGONIA PLANTS. Started plants grown in soil from choice seeds. Double camellia-flowered in separate colors of pink, red, orange, rose, salmon, apricot, yellow. Shipped 50 plants per tray, packed for long-distance shipping. 8¢ per plant. Minimum order, 200 plants. For immediate delivery, F.O.B. San Gabriel.

L. E. COOKE CO., San Gabriel, Calif.

112 Vista San Gabriel, Calif.

DOUBLE TUBEROSES FROM GUATEMALA. Per 100 Per 1000

3 to 4 ins. \$4.50 \$40.00
4 to 6 ins. 5.50 50.00
5 to 6 ins. 7.50 70.00

Postpaid.

GUATEMALA BULB IMPORTING CO. 231 E. 86th St. New York 28, N. Y.

LILY BULBS.

Hardy northern-grown Lily bulbs. New, rare, scarce and unusual as well as standard varieties. New wholesale list now ready. Send for your free copy.

J. HENDRIKS, Grower

Box 27 Portage, Mich.

CAMELLIAS

CAMELLIA PLANTS.

Tub Size Height Price

Colonel Firey	12-in. 50 ins.	\$ 8.00
	16-in. 60 ins.	20.00
	18-in. 80 ins.	25.00
	20-in. 85 ins.	35.00
Julia Drayton	12-in. 50 ins.	7.50
Chandleri Elegans	12-in. 50 ins.	7.50
	16-in. 60 ins.	20.00
	18-in. 60 ins.	25.00
Mathotiana Alba	12-in. 55 ins.	7.50
Pope Plus IX	12-in. 50 ins.	7.50
Emperor Wilhelm	12-in. 50 ins.	7.50
Francine	12-in. 50 ins.	7.50
Debutante	12-in. 45 ins.	10.00
	12-in. 55 ins.	15.00
	14-in. 65 ins.	20.00
	18-in. 75 ins.	30.00
Cheerful	12-in. 50 ins.	5.00
Kumasaka	12-in. 50 ins.	5.00
	12-in. 40 ins.	6.00
	12-in. 50 ins.	7.50
	18-in. 75 ins.	25.00
Marchioness of Exeter	12-in. 50 ins.	10.00
Purity	10-in. 50 ins.	5.00
Monjissu Variegated	10-in. 40 ins.	5.00
Jordan's Pride	12-in. 50 ins.	7.50
Kobakura	12-in. 50 ins.	6.00
Bella Romana	10-in. 45 ins.	5.00
Nagasaki	10-in. new green tubs, 12-in. new green tubs, 14-in. new green tubs, 16-in. new redwood boxes, 18-in. new redwood boxes.	

All plants have made their flowering growth. No plants will need repotting this next year.

Shipment May 15 to June 15.

Net and F.O.B. Milwaukee. Packing at cost. HOLTON & HUNKEL CO. Milwaukee 1, Wis.

EVERGREENS

EVERGREEN TRANSPLANTS AND ROOTED CUTTINGS.

	Per 100	Per 1000
Boxwood, sempervirens, R.C.	\$ 5.00	\$ 45.00
Abelia grand., R.C.	5.00	45.00
Arborvitae, American, R.C.	7.00	70.00
American, 4 to 6 ins. X.	15.00	150.00
Elegansissima, R.C.	8.00	80.00
Burm. R.C.	7.00	70.00
Tom Thumb, 4 to 6 ins. X.	7.00	70.00
Tom Thumb, golden, 4 to 6 ins. X.	15.00	150.00
Pyramidal, R.C.	8.00	75.00
Nigra, R.C.	8.00	80.00
Globe, 4 to 6 ins. X.	7.00	65.00
Globe, 4 to 6 ins. X.	16.50	165.00
Juniper, Savin, R.C.	8.00	80.00
Irish, R.C.	8.00	80.00
Andorra, R.C.	8.00	80.00
Pfitzeri, R.C.	10.00	95.00
Thunbergii, R.C.	8.00	80.00
hicksi, 4 to 6 ins. X.	10.50	105.00
cuspidata, spreading, R.C.	8.00	80.00
cuspidata, upright, R.C.	8.00	80.00
English, upright, 4 to 6 ins. X.	16.50	165.00
English, spreading, 4 to 6 ins. X.	16.50	165.00
Retinospora plumosa, 4 to 6 ins. X.	15.00	150.00
plumosa, 6 to 8 ins. X.	20.00	200.00
pisifera aurea, 4 to 6 ins. X.	15.00	150.00
pisifera aurea, 6 to 8 ins. X.	20.00	200.00
Goldust, 4 to 6 ins. X.	15.00	150.00
obtusa cippri, 4 to 6 ins. X.	16.50	165.00

ESHAM'S NURSERIES Frankford, Del.

LINING-OUT STOCK.

	Per 100
Taxus cuspidata, T. beds, 6 to 9 ins.	\$15.00
Taxus cuspidata, T. beds, 9 to 12 ins.	20.00
Juniper, Andorra, T. beds, 9 to 12 ins.	30.00
Juniper, Waukegan, T. beds, 6 to 9 ins.	18.00
Thujia woodwardi, T. beds, 6 to 9 ins.	18.00
Retinospora plumosa, T. beds.	18.00

ROOTED CUTTINGS—Ready June 1.

	Per 100 Per 1000
Juniperus pfitzeriana	\$11.00 \$95.00
Juniperus pfitzeriana aurea	11.00 95.00
All the above liners are nice heavy stock.	

DAMASCUS NURSERIES, Damascus, Ohio

LINING-OUT STOCK.

	Per 1000
\$85.00 per 1000.	
CEDARHURST NURSERIES, Inc.	
3044 Pawtucket Ave. East Providence, R. I.	

EVERGREENS, B.B.

	Each
Arborvitae, Pyramidal, 18 to 24 ins.	\$1.65
Juniper, Irish, 18 to 24 ins.	1.35
Juniper, Irish, 2 to 2 1/2 ft.	2.00
Juniper, Irish, 2 1/2 to 3 ft.	2.25
Pine, Scotch, 2 to 3 ft.	2.00
Pine, Scotch, 4 to 5 ft.	5.50
Pine, Austrian, 5 to 6 ft.	9.50

DRAKE'S NURSERIES Flint, Mich.

LINING-OUT STOCK.

	Per 100 Per 1000
Acer Palmatum, 1-yr. S.	\$ 6.00 \$60.00
Acer palmatum veitchii, 1-yr. S.	2.50 25.00
Juniperus virg. 1-yr. S.	2.50 20.00
Picea excelsa, 2-yr. S.	2.50 20.00
Pinus pungens, 2-yr. S.	3.50 30.00
Pinus mughus, 2-yr. tr.	6.50 60.00
Taxus cuspid. cap., 1-yr. S.	10.00 75.00
Tsuga canadensis, 2-yr. S.	4.50 40.00
4 to 8 ins., 2-yr. tr.	7.00 60.00
9 to 12 ins., 2-yr. tr.	11.00 100.00
12 to 18 ins., 2-yr. tr.	16.00 130.00
One-year bedded out in the open.	30.00 250.00
Taxus hicksii	15.00 125.00
Taxus cuspidata	15.00 125.00
Taxus baileyi	17.50 150.00
Taxus brevifolia	20.00 200.00
Grafts from pots.	
Acer pal. atropurpureum	75.00
Cornus fl. rubra	50.00
Pinus cembra	50.00
Tsuga sargentii	50.00

POT-GROWN LINERS.

	Each
Arborvitae, Pyramidal, 1 1/2-in. pots.	.20
Arborvitae, Globe, 1 1/2-in. pots.	.15
Berberis julianae, 1-yr., 2 1/2-in. pots.	.20
Biota aurea nana, 6-8 ins., 2-yr., 2 1/2-in. pots.	.30
Pfitzer Juniper, 1-yr., 2 1/2-in. pots.	.25
Irish Juniper, 1-yr., 2 1/2-in. pots.	.15
Greek Juniper, 2-yr., 2 1/2-in. pots.	.25
Andorra Juniper, 2-yr., 2 1/2-in. pots.	.25
Savin Juniper, 2-yr., 2 1/2-in. pots.	.25
Retinospora squarrosa veitchii,	
1 1/2-in. pots.	.20
Taxus capitata, 1-yr., 2 1/2-in. pots.	.20
Taxus cuspidata, 1-yr., 2 1/2-in. pots.	.15
Taxus crenata rotundifolia, 1-yr.,	
2 1/2-in. pots.	.30
Euonymus patens, 1-yr., 2-in. pots.	.10
Buonvillia rhy. seedlings, 2-yr., 2 1/2-in. pots.	.20

NICK'S NURSERY

(Near Louisville) Anchorage, Ky.

	Per 100
Red-fig, Dogwood, 10 to 15 ins., grafts.	\$65.00
White Pine, 6 to 12 ins., tr.	12.50
Jun. pfitz. hetzii (Blue), 4 to 6 ins., tr.	25.00
Perfis. japonica, 4 to 8 ins., tr.	22.50
Sarcococca hookeriana, 2 1/2-in. pots.	25.00
Jun. pfitzeriana, 4 to 6 ins., tr.	22.50
Canada Hemlock, 6 to 12 ins., tr.	15.00
Magnolia liliiflora, 4 to 8 ins., tr.	22.50
American Elm, 3 to 6 ins., adsp.	8.50
Austrian Pine, 3 to 4 ins., tr.	22.50
Stricta Juniper, 4 to 6 ins., tr.	22.50
Enkianthus camp., 4 to 6 ins., tr.	22.50
Taxus capitata, 4 to 6 ins., tr.	22.50
Taxus cuspid. nana (brev.), 4 to 6 ins., tr.	20.00
Taxus hicksii, 9 to 12 ins., tr., hvy.	35.00
Taxus repandens, 6 to 8 ins., tr.	25.00
Send for new Spring List.	
POSSUM HOLLOW NURSERIES	
6327 Magnolia St. Philadelphia 44, Pa.	

CHAMAECYPARIS LAWSONIANA ELLWOODI.

Sturdy, well established California-grown liners.
In 2 1/2-in. pots.

\$17.50 per 100, F.O.B. Monrovia.

MONROVIA NURSERY CO.

P. O. Box 196 Monrovia, Calif.

PICEA PUNGENS GLAUCA.

Bare-root Stock — Packed in Wet Moss. Prices: Each, incl. packing, F.O.B. nursery.

Full color range — Bed run.

Order Lots: 10 to 50 51 to 1000

X, 4 to 8 ins.... \$0.15 \$0.13 \$0.12

XX, 6 to 12 ins.... .35 .31 .28

XXX Selected Stock — Order Lots: 10 to 50

Color green.... \$0.30 \$1.50

Full color range.... 1.15 1.15

Medium blues.... .40 .40

Silver or blue shiners.... .25 .30

10 per cent discount for order lots 51 to 500.

20 per cent discount for orders over 500.

Add 25¢ per tree for B&B or C.S. pots.

Cash with order or before shipment.

H. W. WEBER Weston, Mass.

16 Summer St.

BUXUS JAPONICA.

NOW — field-grown Boxwood. Choice seeds. Full, heady, glossy plants, 6 inches tall, 6-inch spread, full heads, of high quality. The uses of this size boxwood are many and varied.

Priced at \$9.00 per 100. Shipped in moss.

EVERGREEN LINERS FOR SPRING.

Rooted cuttings, ready May 15.	Per 100
Taxus media browni	\$ 8.00
Taxus media hicksii	10.00
Taxus media hatfieldii	10.00
Taxus cuspidata	8.00
Taxus cuspidata capitata	8.00
Taxus alba	8.00
Taxus nigra	8.00
Euonymus radicans	2.00
Transplants from outdoor beds, 9 to 12 ins. Exceptional.	
Taxus media browni	\$15.00
Taxus nigra	15.00
Taxus cuspidata	16.00
Taxus cuspidata capitata	17.50

Packed and mailed free. Cash with order.
SUNNYBROOK FARMS NURSERY
Chesterland, Ohio**LINING-OUT STOCK.**

We offer the following 1-yr., 3-in. potted Taxus, from long, healthy cuttings, thoroughly rooted.

\$25.00 per 100; \$225.00 per 1000

Taxus cuspidata	Taxus hatfieldii
Taxus densiflora	Taxus hicksii
Taxus intermedia	Taxus Vermeulen

ROTTED CUTTINGS.

Strong, 8 to 10 ins. long	Per 100 Per 1000
Juniper, Andorra	\$10.00 \$80.00
Taxus cuspidata	10.00 80.00
Taxus cusp. browni	15.00 120.00
Taxus cusp. capitata	15.00 120.00
Taxus intermedia	10.00 80.00
Taxus hatfieldii, upr.	12.00 100.00
Taxus hicksii	10.00 80.00

THE COTTAGE GARDENS
Lansing 15, Mich.**LINING-OUT STOCK,****EVERGREENS, potted.**

Taxus cuspidata	2% to 2½-in. \$22.50
Taxus hicksii	2½-in. 25.00
Thuya pyramidalis	2½-in. 20.00
Thuya pyramidalis, Imp.	2½-in. 20.00
Thuya woodwardii	2½-in. 17.50

SHRUBS.

Deutzia gracilis	2-in. 10.00
Euonymus carrierei	2½-in. 12.50
Euonymus radicans erecta	2½-in. 12.50
Forstythia Spring Glory	2½-in. 15.00
2 per cent discount for cash with order, packing without cost.	

THE HOLLANDIA GARDENS

South Vienna, Ohio

LINING-OUT STOCK.

Per 100 Per 1000	
Norway Spruce, 2-yr. S.	\$2.50 \$20.00
White Spruce, 2-yr. S.	2.50 20.00
Mugho Pine, 2-yr. S.	3.50 30.00
Colo. Blue Spruce, 3-yr. S.	3.00 27.50
Blue Spruce, 3-yr. T.	4.00 35.00
Black Hills Spruce, 3-yr. S.	3.00 27.50
Black Hills Spruce, 3-yr. T.	4.00 35.00
Black Spruce, 3-yr. S.	3.00 27.50
Black Spruce, 3-yr. T.	4.00 35.00
Oriental Arb., 3-yr. S.	2.50 20.00
Oriental Arb., 3-yr. T.	4.00 35.00
4 to 8 ins.	4.00 35.00

JOHN G. ZELENKA.

R. 2, Box 293 Grand Haven, Mich.

CEDRUS DEODARA.**In 2½-in. pots.**

\$15.00 per 100, F.O.B. Monrovia.

MONROVIA NURSERY CO.
P. O. Box 196 Monrovia, Calif.

Fritzer Junipers, 2½-in. pots.	Each \$0.25
Savin Junipers, 2½-in. pots.	.20
Andorra Junipers, 2½-in. pots.	.20
Pyracantha laiana, upright	
pyracantha, 3-in. pots.	.25
Euonymus patens, large-leaf, 2½-in. pots.	.10
Not less than 30 plants shipped on one order. F.O.B. Kansas City, Mo. Cash, please.	

GLASSCOCK BROS.

6119 Agnes Ave. Kansas City 4, Mo.

UPRIGHT YEW.

Large liners from field rows. Beat strain grown from cuttings of selected plants. Better color superior to seedlings.

Per 100 Per 1000	
Taxus cusp. capitata, 12 to 18 ins.	\$60.00 \$550.00
18 to 24 ins.	70.00 650.00

BULK'S NURSERIES
Babylon, N. Y.**ONE-YEAR SEEDLINGS.** Per 100 Per 1000

Thuya orientalis compacta.

3 to 5 ins. \$3.00 \$25.00

Many interesting variations in color and shape from this stock.

The **HARRIS GARDENS** Enterprise, Kan.**FOR SALE CHEAP!**—Large *Pinus resinosa* (Norway pine), 18 to 48 ins., field-grown, XX.*Picea canadensis* (White spruce), 12 to 36 ins., field-grown, XX. Write for prices.**HAYWARD GREENHOUSES**, Hayward, Wis.**LINING-OUT EVERGREENS.**

Fritzer Juniper, rooted. Per 100 Per 1000

cuttings (available June 1) \$10.00 \$95.00

HENRY NURSERIES

Dept. A Henry, Ill.

COLORADO SPRUCE, all sizes up to 8 ft.

Arborvitae and Mugho Pine.

The **PEQUOT NURSERIES**, Brainerd, Minn.**FRUIT TREES**

We are going to have a surplus in pear, peach, plum, apricot, apple and persimmon trees and will have a few pecan trees. If interested in any of the above, we will be glad to furnish prices. Thank you.

FITZGERALD NURSERY
Stephenville, Tex.**GROUND COVERS****PACHYSANDRA TERMINALIS.**

1-yr., field-grown	Per 1000 \$65.00
2-yr., field-grown	75.00

HILLCREST GREENHOUSES Franklin, Pa.

HARDY CHRYSANTHEMUMS

Strong field-grown divisions, state inspected. We have a large, select stock for immediate or later delivery.

25 at 100 rate. Send for list.

Per 100 Per 1000 \$10.00 \$3.00

Algonquin, early double yellow. 1.25 8.00

Allegro, glowing salmon-pink double. 1.25 8.00

Autumn Sunlight, new golden-yellow. 1.00 6.00

Aviator, new coppery-red double. 1.00 6.00

Betty, fine double pink for cutting. 1.00 6.00

Burgundy, wine-red for cutting. 75 4.00

Chas. Nye, best all-purpose yellow. 1.00 6.00

Chris Columbus, new ivory-white. 1.25 8.00

Dark Red Gold, early dark red Pompon. 1.25 8.00

E. Alexander, early bright yellow. 1.25 8.00

Eureka Giant, brilliant orange. 1.25 8.00

Glowing Coala, deep cherry-red; fine. 1.25 8.00

Heartfire, dark red; tall stems. 1.00 6.00

Heatherbloom, quilled heather-pink. 1.00 6.00

Mrs. P. S. du Pont, peach-pink. 1.00 6.00

Nancy Copeland, spectrum-red Daisy. 1.00 6.00

Pink Radiance, extra-hardy soft pink. 1.00 6.00

Phantom, ivory dbl. deep rose. 75 4.00

Polar Ice, pure white; upright stems. 1.00 6.00

Red Gold, red and gold Pompon. 1.00 6.00

Red Hawk, early bronze-red. 1.00 6.00

Red Riding Hood, hardy bright red. 1.25 8.00

Red Velvet, dbl. velvety crimson. 1.00 6.00

Sept. Dawn, bright lavender-pink. 1.00 6.00

Sept. Sunshine, gay early yellow. 1.00 6.00

Stewart, prolific golden Pompon. 1.00 6.00

Sundance, golden pompon. 1.00 6.00

Pompon. 1.00 6.00

Tangerine, large Spanish-orange. 1.25 8.00

Tiffany Rose, large deep rose. 1.50 10.00

Valiant, bright rose-scarlet SD. 1.25 8.00

Wm. Longland, yellow splashed red. 1.25 8.00

Winnetka, double white; bushy plants. 75 4.00

Yellow Avalanche, large soft yellow. 1.50 10.00

LOW-GROWING AND CUSHION TYPES.

Aurora, floriferous brilliant red. 1.00 6.00

Bronze Cushion, pinkish-bronze. 60 3.00

Butterball, very early deep yellow. 1.00 6.00

Champion Cushion, bronze-red SD. 75 4.00

Coral Sea, low-growing buff SD. 75 4.00

Dean Kay, early rose-pink. 60 3.00

Dahlilium, early wine-red. 75 4.00

Glacier, very early pure white. 1.25 8.00

Little Bob, bronzy-red Pompon. 1.00 6.00

Little Eskimo, compact double bronze. 1.00 6.00

Lodmire, mounds of terra cotta. 75 4.00

Major Cushion, nice pink. 1.25 8.00

Maroon 'N Gold, large double blooms. 1.50 10.00

Mrs. C. H. Hastings, soft red. 1.00 6.00

NaNook, double white Cushion. 1.00 6.00

New Red Cushion (Santa Claus). 75 4.00

Pomponette, bronze-yellow Pompon. 1.00 6.00

Pygmy Gold, early yellow. 75 4.00

Pink Cushion, soft pink mounds. 60 3.00

Sept. Bronze, hardy golden bronze. 1.00 6.00

Sept. Cheesecake, rich cherry-red. 1.00 6.00

Sept. Cloud, large white Cushion. 75 4.00

Tints of Fall, gay, very dwarf. 1.00 6.00

White Cushion, white, tinged pink. 75 4.00

Yellow Cushion, dbl. and early. 75 4.00

Yellow Cushion Supreme, soft yellow. 1.25 8.00

Youghard's Pride, bronze Pompon. 1.00 6.00

ENGLISH MUMS.

Alabaster, early white, incurved

Amber Utopia, amber blended orange.

Belle Mauve, silvery-pink. 1.25 8.00

Alfreton Beauty, golden-amber. 1.25 8.00

Bronze Buttercup, large deep bronze. 1.25 8.00

Content, large incurved yellow. 1.25 8.00

Daily Express, large chestnut blend. 1.25 8.00

Egypt, colorful red and bronze. 1.25 8.00

Eldorado, nice deep yellow. 1.25 8.00

Henry Stitcliffe, large yellow. 1.25 8.00

Honey Bee, reddish-orange crimson. 1.25 8.00

Maryland Dome, orange-yellow. 1.25 8.00

Mrs. J. Findlay, sprays of gold. 1.25 8.00

Mrs. T. Guthrie, early chestnut-red. 1.25 8.00

ENGLISH MUMS.

COLORFUL MUMS.**COLORFUL HARDIES ARE BOOMING!**

They really are. Could it be the harmonious combination of colors in the new up-to-date hardies? Attractive colors that endure are more predominant in hardies than any other class of plants.

Wonderfully attractive with sales-appeal colors, from deepest to various soft and enduring shades unknown in other flowers.

Those who desire to participate in profits being made should lose no time in ordering one of our 250 variety selections of 5 or better, 10 each, and you are in without loss of valuable time in building a profitable stock.

SPECIAL BARGAIN ASSORTMENTS.

You will like our selections of fine, colorful Mums. Every one a gorgeous early to late blooming assortment of representative varieties. All outstanding, popular and profitable colors and types, including our new Mum for '49, "Cutie," with many newest introductions by foremost American and English hybridizers.

ROOTED CUTTINGS.

Labeled, true to name.

Our selection as stated above.

Soil-grown before shipping; never starved.

50 each, 20 kinds, 1000 plants. \$35.00

25 each, 20 kinds, 500 plants. 20.00

10 each, 20 kinds, 200 plants. 12.00

5 each, 20 kinds, 500 plants. 6.00

2.5 each, 20 kinds, 1000 plants. 3.00

1 each, 10 kinds, 1000 plants. 1.00

50 each, 100 kinds, 500 plants. 40.00

25 each, 100 kinds, 2000 plants. 20.00

10 each, 100 kinds, 1000 plants. 12.00

5 each, 100 kinds, 500 plants. 6.00

2.5 each, 100 kinds, 1250 plants. 1.00

1 each, 100 kinds, 1000 plants. 1.00

50 each, 200 kinds, 1000 plants. 100.00

25 each, 200 kinds, 500 plants. 50.00

10 each, 200 kinds, 200 plants. 10.00

5 each, 200 kinds, 100 plants. 2.00

2.5 each, 200 kinds, 50 plants. 1.00

1 each, 200 kinds, 100 plants. 1.00

50 each, 200 kinds, 1000 plants. 60.00

25 each, 200 kinds, 500 plants. 20.00

10 each, 200 kinds, 200 plants. 10.00

5 each, 200 kinds, 100 plants. 2.00

2.5 each, 200 kinds, 50 plants. 1.00

1 each, 200 kinds, 100 plants. 1.00

50 each, 200 kinds, 1000 plants. 125.00

25 each, 200 kinds, 500 plants. 40.00

10 each, 200 kinds, 200 plants. 12.00

5 each, 200 kinds, 100 plants. 2.00

2.5 each, 200 kinds, 50 plants. 1.00

1 each, 200 kinds, 100 plants. 1.00

50 each, 200 kinds, 1000 plants. 200.00

HARDY CHRYSANTHEMUMS—Continued

HARDY CHRYSANTHEMUMS.
\$1.00 per 10; \$2.00 per 25.
Avalanche, Aviator, Betty, Bokhara, Bonfire, Chas. Nye, Chiquita, Clara Jameon, Dahliaum, Early Joan, Helen, Exeter, Glittering Hills, Glowing Coals, Golden Rose, Golden Salmon, Gold Treasure, Golden Hours, Hilltop Gold, Honeycomb, Irene, Jayeff, Jewell, Judith, Anderson, King Midas, Klondike Gold, Lola, Late Rose, Lavender Lady, Magnolia, Mandalay, Murmur, Nantucket Velvet, Olive Longdale, Orange Cluster, Orient Glory, Peggy, Rob't Brordon, Red Velvet, Red Alpine, Red Riding Hood, Rose Mound, Rosita, Sequoia, Sunapee, Sunkist, The Chief, White Wonder, Winterset, Violet, Yellow Spoon, Purple Jewel.

ENGLISH VARIETIES.

\$1.50 per 10; \$3.00 per 25. Buckeye Beauty, Purple Jewel.
\$1.00 per 10; \$2.00 per 25.
Alabama, Alex, Anna, Anna's Assurance, Autumn Gold, Belle Mauve, Bronze McLeod, Bronze Frieda, Corona, Daily Express, Ella Friend, Golden Emperor, Golden Queen, Gold Standard, Harvest Moon, Hillcrest Red, Jean Harlow, John Baxter, Lutonia, Mayland Dome, Mrs. E. Pattie, Mrs. Percy Beer, Nettle Brooks, Phyllis, Gold, Polly, Red Crusader, Scarlet Coat, Sunbeam, Sunlit, Sybil, Unique, Volcan, Wardown Bronze, Wendy, Yellow Gown.

GREENHOUSE VARIETIES.

\$1.00 per 10; \$2.00 per 25.
Hilda Bergen, Magenta, Roseum.
CUSHIONS.
\$1.00 per 10; \$2.00 per 25.
Apricot Glow, Queen Cushion, Yellow, Cushion.

McININCH GREENHOUSES
3802 Faaron St. St. Joseph, Mo.

CHRYSANTHEMUMS.

Well rooted, healthy, true-to-name. No stunt. Exported handled for delivery as requested. \$4.00 per 1000. Varieties marked * \$5.00 higher. Less than 200 of a variety, add 10 per cent.

STANDARDS.
•Blazing Gold
•Gold News
•Detroit News
•Indianapolis
(white, yellow, bronze)
•Orange Queen
•Golden Pearson
•Penrod
Quaker Maid
Betsey Ross
Celestra
Helen Frick
White Frick
Bronze Frick
Pink Seidelwitz
Honeydew
W. Prince
Hilda Bergen
Mefo
Yellow Mefo
White Mistletoe
Supreme (white, yellow, pink, bronze)

We can furnish 2½-in. potted stock of most of the above varieties, at \$7.50 and \$8.50 per 100.

WALKER NURSERIES
Box 34, Normal Sta., Memphis 11, Tenn.

HARDY MUMS.

Surplus Stock.

Per 100

Algonquin, double yellow \$4.00
Autumn Lights, coppery-bronze, single 4.00
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Bronze Cushion 4.00
Coral Seas, buff, single 5.00
Dahliaum, wine-red, cushion 5.00
Dwarf Jewel, dark rose, small pompon 8.00
Ermalinda, iridescent small pompon 5.00
Erieine, Wonder, yellow 5.00
Goblin, bronze, pompon 4.00
Glacier, white 5.00
Jean Treadaway, pink 5.00
Jean Helen, red, single, compact, low 5.00
King Midas, golden-yellow 5.00
Little Eskimo, low, white, small pompon 4.00
Major Cushion, better pink 5.00
Pomponette, tight yellow-orange pompon, low 6.00
Prof. Sam Williston, red, single, low 4.00
Red Cusion 4.00
Red Gold 4.00
Rich Cummings, bronze 4.00
September Bronze 4.00
September Cloud, white 4.00
Spoons, bronze, orchid and yellow 6.00
Sybil, low, pink 8.00
Tiffany Rose, deep rose, tall 8.00
Yellow Cushion 4.00
Not less than 25 of a kind. Min. \$4.00.

C. J. DUNN
R. I. Box 239 N. Benton Harbor, Mich.

HARDY CHRYSANTHEMUMS.
Send for our 1949 price list.
Cultural notes on cut flowers and pot plants.
C. C. BREECE Delaware, Ohio

HARDY PLANTS**GERBERAS.**

The Hersey Improved Duplex Gerberas now available to all. This is the choice, florists' cut flower so much in demand. Strong healthy 1-year plants from the field, priced at \$17.00 per 100. Delivery through June.

L. E. COOKE CO.
112 Vista St. San Gabriel, Calif.

HARDY PLANTS. Per 100

1-year, field-grown, bloom this season.
Anchusa myosotidiflora \$12.00
Alyssum saxatile 12.00
Alyssum creticum 12.00
Aster frikartii, rooted cuttings, coldframe 15.00

Incavillaria grandiflora, brevipes 15.00
Tritoma grandiflora, orange-scarlet 12.00
Delphinium, Blackmore & Langdon's 12.00
Liatria pycnostachya, 2-year 18.00

LARGE plants bloom this season.
Rose, scarlet, crimson and flame, mixed colors 18.00
Winter Whites, Harvest Yellow 18.00
Grand Canyon Shades, vivid blends 18.00
Primula auricula, art shades 18.00
Primula luteola, rose, lilac 20.00
Primula capitata, a real genuine rich violet 25.00
Blue Polyantha, shades of blue 20.00
Blue Acacia 25.00

Seeds of same varieties
S. J. COOK NURSERY Dunkirk, N. Y.

HARDY PERENNIALS.

These are field plants, not small seedlings.

Aster Beechwood Challenger Per 100 \$15.00
Aster Countess of Dudley 15.00
Aster Niobe 15.00
Artemisia Silver King 15.00

Carnation Grenadin, White, Yellow, Pink, Red 12.00
Daisy, White Swan, strong div. 5.00
Delphinium, Pacific, mixed 20.00
Dianthus plumarius 12.00
Funkia lancipila 15.00
Gypsophila paniculata 12.00
Gypsophila repens, Bodgeri 15.00
Primula veris, various 15.00

Write for quantity prices.
See our Hardy Mum ad in this issue.
ELKHART NURSERY CO. Elkhart 1, Ind.

HARDY PERENNIALS.

Field-grown plants, not small seedlings.

Aquilégia, blue or rose shades Per 100 \$8.00
Carnation Grenadin, white, pink, red, Black King 8.00
Delphinium Bellamoum 10.00
Platycodon, new shell-pink 10.00
Sweet Pea, pink 10.00
Rhubarb, Chipman's Canada Red 15.00
Baby Iris, Spring Skies, Marocain 8.00
Bearded Iris, Tenaya, deep purple; Prairie Gold, yellow; Anitra, light blue; Helen Fischer, orchid-pink; Red Ghian, deep red; Red Bird, pink standards, red falls 7.00

Cash with order. T.O.B. Essex.
The ESSEX NURSERY Box 126 Essex, Iowa

STRONG ONE-YEAR-OLD HARDY PHLOX.

Because we are already sold out on several varieties of Phlox and unwilling to provide our customers with unwilling substitutes or disappointed buyers, we are giving the small buyer the benefit of our new plan.

We still have at least 30 varieties on hand, some of them the best obtainable, each variety carefully wrapped and labeled. 10 plants each of 5 named varieties (our selection) at \$5.50, 10 plants each of 10 named varieties (our selection) at \$10.00. Terms: Cash with order. Shipment when desired.

KNOLL & WALTERS PERENNIAL FARM
Zeeland, Mich.

ROUTE 2

Aquilegia coerulea, blue and white Per 100 \$12.00

Carnation, hardy rooted cuttings, pink and red, Brothers 12.00

Doronicum caucasicum 18.00

Erinus, rock plants, pink and red 12.00

Geum Mrs. Bradshaw 12.00

Geum Prince of Orange 12.00

Polygonum, spotted foliage, pink and blue flowers on the same plant.

Early spring 12.00

Sweet William, Scarlet Beauty, and Newport Pink 12.00

S. J. COOK NURSERY Dunkirk, N. Y.

ROUTE 1

ERICA MELANThERA, WHITE CHRISTMAS HEATHER.

Per 100

2½ ins. \$15.00

4 ins. 25.00

5 ins. 30.00

6 ins. 35.00

7 ins. 40.00

Immediate shipment. Packing at cost.

HOLTON & HUNKEL CO. Milwaukee 1, Wis.

LIRIOPE.

But few plants will grow equally well in sun or shade, hot or cold, wet or dry. Liriope measures up to this. We have a nice stock of this great border plant to offer at the following attractive price. Nice field divisions ready now.

Liriope muscari exiliiflora, \$5.00 per 100.

RIEGEL PLANT CO. Experiment, Ga.

BLEEDING HEARTS.

Per 100

Dicentra spectabilis, 2 to 5 ins. \$30.00

and up 40.00

Dicentra eximia, 2 to 5 ins. 15.00

Dicentra eximia, 2 to 8 ins. and up 20.00

J. HENDRIKS, Grower Portage, Mich.

Box 27

GYPSOPHILA BRISTOL FAIRY.

Strong, grafted plants. Per 1000
Per doz. \$3.00
2½-in. pots 25 at the 100 rate. 250 at the 1000 rate.

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HEMEROCALLIS.

J. A. Crawford, Gandy, Rock, Mr. W. H. Wyman, Anna Betscher, Radiant, Lemon, Imperator, Amaryllis, The Gem, George Yield, Flavia, Mrs. A. H. Austin, \$1.80 doz.; 55 for \$5.50. Hyperion, 50¢ ea.; Vulcan, red, \$1.00 ea. No orders for less than \$5.00 shipped.

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Iris, \$70.00 per 1000; fall bloomers. 16¢ ea. Siberians, 10¢ ea. Dutch Lillies, 16¢ ea. Mixed Peonies, 20¢ ea. H & E Daisies, Almonds, Campanula pyramidalis, 1¼¢ ea. 100 varieties better hardy Chrysanthemums, \$7.00 per 100. Minimum 10 of a kind. Cash net. F.O.B. Express, HILLVIEW GARDENS, Fort Madison, Iowa.

PERENNIALS.

New Standard Kinds. A most modern and complete selection. New Wholesale List ready. Send for your Free Copy Now.

CARROLL GARDENS Westminster, Md.

Box 15 America's Best Source for Hardy Plants in THE WAYSIDE GARDENS Mentor, Ohio Write for Trade List.

BLEEDING HEARTS. Each Dicentra spectabilis, 3 to 5 eyes 40.30 Dicentra spectabilis, 5 to 8 eyes 40 Large healthy roots, packed as dug. CHARLES W. BROWN Berlin, Md.

HARDY PERENNIALS. We are growers of both seeds and plants of hardy perennials in large assortment, many hundreds of kinds. Ask for Special Wholesale Price List.

REX. D. PEARCE, Dept. N, Moorestown, N.J.

HARDY PLANTS.

See the March 1 issue of the American Nurserymen for list of Hardy Plants.

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SEEDS OF HARDY PERENNIALS. 40 Varieties and Species offered in our Special Wholesale Price List of perennial seeds and plants. Sent on request.

REX. D. PEARCE, Dept. N, Moorestown, N.J.

HARDY PHLOXES. See the March 1 issue of the American Nurserymen for list of Hardy Phloxes.

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Pansies, perennials and rock plants in wide variety. Send for catalog.

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PALMS

PALMS. Kentia forsteriana, Kentia belmoreana. Sand-grown, 5 to 6 inches, \$12.50 per 100. Bare root, packed in moss. L. E. COOKE San Gabriel, Calif.

110 Vista St.

ROSEBUSHES

OREGON ROSES, 2-year, field-grown on multiflora, in all the most popular standard varieties. Graded right and green to the tops. We pack light but tight, without cost. Send for list.

MT. HOOD NURSERY Gresham, Ore.

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TAXUS CUSPIDATA. We offer new crop direct from Japan. Let us know the quantity you require.

AMERICAN BULB CO. 1335 W. Randolph St. Chicago 7, Illinois

SHRUBS AND TREES

HIBISCUS (Mallow). Henderson's Giant Hybrid. These new hybrids can be grown anywhere. Absolutely hardy. The flowers are enormous in size, measuring 6 to 12 ins. across. The colors are gorgeous and striking. Are grand for specimen planting on lawns, patios, etc. The giant Hibiscus, with their gorgeous colors, are attracting much attention throughout the nation. Mixed colors. Blooming-size stock.

\$4.00 per doz.; \$20.00 per 100; \$150.00 per 1000.

RIEGEL PLANT CO. Experiment, Ga.

200 Lombardy poplar, 6 to 8 ft. \$0.20

100 Lombardy poplar, 5 to 6 ft. 15

Minimum order, 25 trees. Packing free.

F.O.B. here, cash or C.O.D.

IDEAL FRUIT FARM Stillwell, Okla.

Wentzell's Nursery is the place for down-to-earth bargains for the man who can visit us and haul away his own trees. Willows, shade trees, blue spruce, fruit trees, purple-leaved plums, hundreds of red-flowering peaches (7 to 8 ft.), pink dogwood, pink almond, azaleas, mt. pinks, rhododendrons, blueberries, Eldorado blackberries and many others.

The beauty of these trees is that they are all balled and burlapped, fresh dug and have not been in storage all winter.

We have no price lists to mail out.

Open Sundays.

WENTZELL'S NURSERIES

Cattell Rd. Wenonah, N. J.
Four miles south of Westville, N. J., on Rt. 47. Turn right on Cattell Rd. and go one mile.

Per 1000

Canadian hemlock transplants	\$ 75.00
6 to 6 ins. T	125.00
9 to 12 ins. TT	200.00
Red-leaved Barberry	
9 to 12 ins. br. 2-yr.	40.00
12 to 15 ins. br. 2-yr.	60.00
15 to 18 ins. br. 2-yr.	70.00
Green-leaved Barberry	25% less

Packing free for cash or order.

TWIN CEDAR NURSERY

Williamsburg, Mass.

VEGETABLE ROOTS

SWEET POTATO PLANTS—Nancy Halla, Porto Rico. Send no money. Pay when received. May prices: 300, \$1.25; 500, \$1.75; 1000, \$3.00; 5000, \$13.50. June prices: 300, \$1.00; 500, \$1.50; 1000, \$2.50; 5000, \$11.50. ROBERT SIMMONS Sharon, Tenn.

SUPPLIES

KNOCK-DOWN FLATS.

Made from a good grade of Southern Yellow Pine, since Cypress is not available. Standard specifications, inside measurements. 16x12x2 1/2% \$16.25 per 100 16x14x3 1/2% 20.00 per 100 20x14x2 1/2% 25.00 per 100 20x14x3 1/2% 23.00 per 100 22% x15x2 1/2% 22.00 per 100 22% x15x3 1/2% 25.00 per 100 All other sizes quoted on request. Prices F.O.B. Birmingham.

We are manufacturers, not jobbers. Freight to any point is a small item per flat. Our flats are the best. Why pay more? Our quality guaranteed. Prompt shipment, any quantity. Attach check to order.

We make mixed shipments of flats, plant boxes and spray boards.

HIGHTOWER BOX & TANK CO.

Birmingham, Ala.

DAHLIA OR TREE LABELS.

	Priced per 1000
3 1/2 x 5% ins., notched, not wired	\$2.50
3 1/2 x 5% ins., wired	3.00
4% ins. (cartons 1000 each)	2.50
5% ins. (cartons 1000 each)	2.75
6% ins. (cartons 1000 each)	3.25
	3.75

Priced per carton.

	8% ins. (cartons 500 each)	10% ins. (cartons 500 each)
GARDEN STAKES.	2.50	3.00

Priced per carton.

	8% ins. (cartons 250 each)	10% ins. (cartons 250 each)	12% 1/2 ins. (cartons 100 each)
	2.00	2.25	1.25

Our labels are perfectly white and smooth on both sides and are pronounced by growers the best and most economical.

YOHO & HOOKER Youngstown 2, Ohio

FERTILIZERS.

SHREDDED CATTLE MANURE. 50-lb. bags. Free from weed seeds. 500 lbs. \$13.00, F.O.B. Chicago. 1000 lbs. 24.00, F.O.B. Chicago. Ton. 45.00, F.O.B. Chicago. 1 ton, per ton. 32.00, F.O.B. Omaha.

By ordering a full 40-ton car, considerable savings in freight from Omaha can be effected.

OTHER FERTILIZERS. F.O.B. Chicago. 100-lb. bag. Ton. Muriate of Potash \$5.00 \$8.00 Nitrate of Soda 5.50 10.00 Superphosphate 2.45 4.00 Sulphate of Ammonia 5.25 9.00 Velvet green (5-10-5) 2.90 5.80

AMERICAN FLORIST SUPPLY CO. 1335 W. Randolph St. Chicago 7, Ill.

SPRAY BOARDS.

Good-quality spray boards, from southern Yellow Pine. Each

16x2 1/2 x 1/4	\$0.02
All other sizes quoted on request.	.01

Prices F.O.B. Birmingham. Prompt shipment, any quantity. Attach check to order.

We make mixed shipments of flats, plant boxes and spray boards.

HIGHTOWER BOX & TANK CO.

Birmingham, Ala.

MINNESOTA WHITE CEDAR FLATS. 12x16x2 1/2% \$18.25 per 100

14x20x2 1/2% 22.00 per 100

14x20x3 1/2% 25.00 per 100

Other sizes quoted on request. Also crating and other lumber, Aspen and Pine. F.O.B. Cook, Minn. Attach check.

H. C. HILL & SONS, Cook, Minn.

Spring is the time to build new low-cost shade houses, or to replace your old wornout lath or slat houses with Brand-New Low-Cost Heavy Steel Wire Netting. This material is made of 16-gauge steel wire 2x6-in. mesh, garnished with steel wool and coated with high-grade enamel. Each roll will fit long by 6 ft. wide containing 450 sq. ft. Inexpensive and easy-to-construct lath houses built with this netting provide uniform shade ideal for Azaleas, Camellias and for all other plants. Available for immediate shipment. Write for descriptive folder and prices to cover any quantity you may need from one roll to carload shipments.

H. M. OWEN E. A. FARLEY
P. O. Box 946 3333 Gentilly Blvd.
Columbus, Miss. New Orleans, La.

IMPORTED CHINESE TONKIN CANES.

Strong—smooth—long-lasting. The best Bamboo plant stake.

Contents Price
per bale per bale
4 ft. 1/2 to 1/2-in. diam. \$500 \$19.50
5 ft. 1/2 to 1/2-in. diam. 250 14.75
6 ft. 1/2 to 1/2-in. diam. 200 13.60
7 ft. 1/2 to 1/2-in. diam. 180 12.25
8 ft. 1/2 to 1/2-in. diam. 150 11.00
Prompt shipment on all sizes except the 4-ft. size, which is for June delivery.

Bale lots only. Quantity discounts: 10 bales up less 5 per cent, 25 bales up less 7 per cent.

McHUTCHISON & CO. 35 Chambers St. New York 7, N. Y.

PLANT BOXES.

KNOCK-DOWN PLANT BOXES. Ends of good grade southern Yellow Pine, sides and bottoms of one piece 1/4-in. Masonite.

Standard specification, inside measurements. 12x5x5 \$12.00 per 100 15x5x5 15.00 per 100

All other sizes quoted on request. Prices F.O.B. Birmingham. Prompt shipment, any quantity. Attach check to order.

We make mixed shipments of flats, plant boxes and spray boards.

HIGHTOWER BOX & TANK CO.

Birmingham, Ala.

TIDEWATER RED CYPRESS FLATS. We manufacture our own flats and ship the same day.

Size 20x15x3 ins. inside measure, 42c each.

The sides and bottoms full 1/8 in. thick. The ends are 1/8 in. thick. Accurately fitted and knocked down, 10 complete flats to a bundle. Genuine dense virgin Cypress, the kind that lasts and lasts.

"Just a little better than the rest."

YOHO & HOOKER Youngstown 2, Ohio

TERRA-LITE, SPECIAL PREPARED VERMICULITE.

Amazing new garden discovery. Proved by tests at a leading university. Cuttings rooted from 3 days to 3 weeks sooner, with bigger, stronger roots! Old-time growers are amazed with results.

Big bags, approx. 4 cu. ft. or 2 bu. 5 bags, \$5.75; 10 bags, \$11.50; 20 bags, \$22.00. Sample bag via express, prepaid, \$2.00.

"We ship same day."

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SUPERIOR QUALITY MOSS PEAT.

pH 4.5, highly organic, fine-fibered moss peat. Air-dried to ideal moisture content for best results. Shipped in chemically treated bags for longer service.

2 bu. ea. 4 bu. ea.

26 to 50 bags, F.O.B. plant, \$1.25 \$1.65
Write for low bulk prices.

JUNIUS PEAT CO.

60 Pearl St. Lyons, N. Y.

CAMOUFLAGE WIRE.

Excellent protection against frost and sun. Used over beds, shrub houses, greenhouses, sales stands, etc., with satisfaction by hundreds of growers. Rollin' 6 ft. wide by 75 ft. long. Consists of steel wool on pliable, welded wire fencing. Only \$6.00 per roll, cash with order. Large lots quoted.

TANKARD NURSERIES Exmore, Va.

HEATUMS CABLE.

Roots more cuttings in less time; protects outside sash and water pipes; melts snow in gutters, on walks and driveways. Units available 60 ft. to 1,000 ft. long. Present your problems to our engineers.

L. N. ROBERSON CO.

1539 East 103rd St. Seattle 15, Wash.

WISCONSIN'S QUALITY SPAGHNUM MOSS.

Clean, long-fibered, solidly packed in baled or wired bales of standard size, direct from drying beds. None better.

Trucked when feasible.

WARRENS MOSS CO., Box 7, Warrens, Wis.

Get the Garden Store idea for additional profits. We manufacture products direct from forest to you—arbors, pergolas, arches, trellises, etc., are good business stimulators and profit makers, best for outdoor display. Write for designs and low prices.

TUNNEY & SON NURSERY Kenosha, Wis.

GIBRALTAR Frost Covers pay for themselves. Economical, long-lasting, ideal for windbreaks. 6 ft. wide; 50 ft. \$13.75; 100 ft. \$26.00; 150 ft. \$39.00. NEW AMSTERDAM IMPORT, 122 Chambers St., New York 7, N.Y.

PEAT MOSS.

Highest-quality acid sphagnum peat moss weighing about 8 lbs. per loose bushel, 120-lb. hydraulic-compressed bales, \$3.25 each; 10 or more bales, \$3.00 each. Catalog on request.

COLBY PIONEER PEAT CO., Inc.

Hanlonetown, Iowa

NURSERY REQUISITES.

Budding, Grafting Supplies, "TRE-TEX," Hydrometers, Hygrometers, Magnifiers, Pruning and Spraying Equipment, Ladders.

Catalog on request.

TYSON ORCHARD SERVICE

Flora Dale (Adams County), Pa.

HIGH NITROGEN HORTICULTURAL PEAT.

Unexcelled for soil-improving work. Used by leading growers for a quarter century. One 3-bushel bag, \$1.25; 10 bags, \$1.15; 25 bags or more, \$1.00 each.

COLBY PIONEER PEAT CO., Inc.

Hanlonetown, Iowa

SPAGHNUM MOSS.

Clean, long-fibered, well pressed baled pales of standard size, \$1.25 per pale, F.O.B. City Point. Cash with order. Write for prices on large lots. Immediate shipment.

THOMAS RESHEL

City Point, Wis.

PRINTING—LETTERHEADS, BILLHEADS, STATEMENTS, CARDS, ENVELOPES, TAGS, BLOTTERS, FOLDERS, SAMPLES SENT.

J. GARLAND HILL, Dept. A, Seaford, Del.

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TWO NEW PROPAGATORS' HANDBOOKS.

SECRETS OF SUCCESSFUL PROPAGATION. THE BIG LONG-LEAF, CARPENTER, CALIFORNIA, nurseriesman. Many drawings. \$3.00.

PROPAGATION OF TREES, SHRUBS AND CONIFERS, by Wilfrid G. Sheat, distinguished British horticulturist. \$7.50. Both just published.

Write to HORTICULTURAL BOOK SERVICE, 216 S. Detroit Ave., Concord, Calif.

ORGANIC FUNGICIDES.

Of the more than seventy new fungicides developed and distributed for experimental tests by various chemical companies since 1940, some have shown fungicidal properties equal to or better than the older copper and sulphur fungicides, according to J. C. Carter, Illinois Natural History Survey, Urbana, in an address presented at the twenty-third National Shade Tree Conference.

In tests at the Illinois Natural History Survey experimental nursery during the period from 1943 to 1947, twenty-two organic fungicides were applied on shade and ornamental trees.

The occurrence of foliage diseases on shade trees is influenced greatly by temperature and moisture conditions during the late spring and early summer months. The trees sprayed with Puratized Agricultural Spray, manufactured by the Gallowhur Chemical Corp., New York city, at one to 5,000 parts, showed the least amount of leaf spot and also the least amount of defoliation. Defoliation and leaf spot were somewhat greater on trees sprayed with Puratized Agricultural Spray at one to 10,000 parts. The sprayed trees were given two applications of each fungicide, the first on June 17 and the second on July 9. In 1946, black walnut sprayed with Puratized Agricultural Spray had one to twenty spots per leaflet while the unsprayed trees had from zero to 200 spots per leaflet.

In 1947, ten fungicides were tested

Nurseryman's Library

"A Nurseryman's library is not complete without books on plants, plant propagation and plant handling."

Here are some suggestions:

TAYLOR'S ENCYCLOPEDIA OF GARDENING.
by Norman Taylor. \$5.00.

CAMELLIAS ILLUSTRATED.
Edited by Morrie L. Sharp. \$5.00.

FAVORITE FLOWERS IN COLOR.
Edited by E. L. D. Seymour. \$4.95.

HOW TO INCREASE PLANTS.
by A. C. Hottes. \$3.00.

PROPAGATION OF PLANTS.
by M. G. Kains and L. M. McQuesten. \$4.00.

MAINTENANCE OF SHADE AND ORNAMENTAL TREES AND SHRUBS.
by P. P. Pirone. \$6.50.

TREE EXPERTS' MANUAL.
by Richard R. Fenska. \$5.00.

PRUNING TREES AND SHRUBS.
by E. P. Felt. \$2.50.

NURSERY MANUAL.
by L. H. Bailey. \$5.00.

FRIENDLY EVERGREENS.
by L. L. Kumlien. \$6.00.

DISEASES AND PESTS OF ORNAMENTAL PLANTS.
by Bernard Dodge and W. L. Rickett. \$6.00.

THE BOOK OF TREES.
by Alfred Hottes. \$4.00.

THE BOOK OF SHRUBS.
by Alfred Hottes. \$4.00.

THE BOOK OF PERENNIALS.
by Alfred Hottes. \$2.75.

ROSES OF THE WORLD IN COLOR.
by J. Horace McFarland. \$5.00.

LILACS FOR AMERICA.
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on sycamores for the control of anthracnose. Approximately three per cent of the leaves on sycamore sprayed with Puratized Agricultural Spray were affected with anthracnose. On unsprayed sycamores, approximately sixty per cent of the leaves were affected with anthracnose.

Most effective control has been obtained thus far with three to five applications of spray. The first application was made from one to two weeks before the buds opened, and the second was made just as the leaves began to unfold from the buds. One to three additional applications were made at weekly intervals, depending upon the amount and frequency of rainfall.

Black leaf spot on the American elms used in the experiments was insufficient to give worth-while control data. Earlier tests on commercial plantings of elms showed that either copper or sulphur sprays would control this pest. Two or three applications of spray at 14 to 20-day intervals, when the first spray was applied about June 15, gave most satisfactory control.

Several of the organic materials have shown promise in the control of fruit and vegetable crop diseases. However, they appear to be more specific in effect because they control one or a few diseases instead of all of the diseases of any one crop. Organic mercury fungicides show promise in the control of fruit and turf diseases; dithiocarbamate fungicides, such as Fermate, Zerlate and Dithane, are most effective for the control of fruit and vegetable diseases, and organic cadmium fungicides, such as Puratized 177, show promise in the control of turf diseases. Elgetol is mainly an eradicant fungicide and has proved effective in the control of apple scab and peony measles.

SEATTLE BULLETIN.

Among the contributors to the spring number of the Arboretum Bulletin, published quarterly by the University of Washington Arboretum Foundation, Seattle, is Harlan P. Kelsey, East Boxford, Mass., who writes on his old hobby under the title, "Unique Flora of the Great Smoky Mountains National Park."

The Seattle Arboretum Bulletin is devoted to general horticultural information, not just the activities of the Washington arboretum, carrying a number of interesting articles in the issue, of forty-four pages and cover. This spring's issue is No. 1 in volume 12.

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PLANTING SMALL HOMES.

Emphasizing that landscape gardeners should recognize the practice of horticulture as a business and should handle it as such, Arnold Davis, director, Garden Center of Greater Cleveland, spoke on "Planting Suggestions for Small Homes" at the short course for arborists and landscape gardeners held in January at Ohio State University, Columbus.

The practicing horticulturist should streamline his methods and become aware of the opportunities in the field, said Mr. Davis. He should size up the situation that exists before attempting a solution of any home grounds problem. In effective salesmanship, this preliminary survey is important as a logical prerequisite to answering the homeowner's questions.

First, he should suggest a development program which will continue to bring about the owner's satisfaction and confidence in the gardener, Mr. Davis recommended. Work should be planned so that continuing results can be enjoyed through an additional development of the property each year, but with prices kept at a level to encourage such development. For example, younger children may want sand piles, wading pools or a playhouse of honeysuckle or privet. As they grow into the soft drink and hamburger stage, picnic tables and barbecues may be desired, as well as open lawns for croquet or badminton; this could lead to a show garden which would be ideal for parties. Finally, when the children have grown up, a garden featuring roses, annuals, perennials and bulbs could be developed for the parents to enjoy as they grow older. The garden then can be redesigned with emphasis on hedges, background screens, fences and gates. Overgrown plantings can be removed, and maintenance requirements simplified. The owner's interest and pride in his property can be expressed by featuring some special plant or garden detail.

In the planting of the small home grounds there is a need for good trees well placed. Overplanting should be avoided, and simplicity should be the keynote. The most satisfactory garden is still one with a good, open, green lawn upon which interesting shadows can play.

The old-fashioned garden was typified by a lack of design, organization, texture and scale. It was more often inherited than planned, and there was always a great urge to change things.

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velopments which can be interpreted as being similar to informal and formal plantings. An all-green garden is cool and restful on the warm days of summer, and the possibility of its use should not be overlooked. Occasionally, even on small grounds, there is an opportunity to develop small, wooded vistas, and too often this possibility is overlooked. No single garden feature is so satisfying as a well designed garden gate, but, of course, one must have a place for it. If a client wants flowers for cutting, one should allocate space for a cutting garden where proper care can be given to such plants.

In order to execute a garden plan intelligently one must know something about the family that is going to use the garden. It is important to know who is going to do the work after the garden is planned and how much he or she wants to do. One must have good, workable, simple designs which make use of the better plants properly placed. A well planned development program in the small home should assure the owner of considerable satisfaction and offer the horticulturist an opportunity for continuing creative work, concluded Mr. Davis.

A panel discussion on landscape problems was led by Prof. Victor H. Ries, department of horticulture, Ohio State University, who was aided by Mr. Davis and Prof. Brooks Wiggington, department of landscape architecture, University of Georgia, Athens.

Regarding the planting of shade trees near the house, Professor Wiggington pointed out that architects do not like to have a major tree planted closer than fifteen feet to the house.

Mr. Davis favored setting out young shade trees, in most cases, in preference to moving in larger, more expensive ones and running the risk of their not becoming properly established or being lost entirely.

Professor Wiggington suggested the use of *Halesia monticola*, where it is hardy, in preference to the commonly planted *Halesia carolina*. The former plant reaches a height of from thirty to forty feet.

In purchasing the white fringe tree one should be sure to obtain the male type, as it is more effective in flower. Mr. Davis advised. For a ground cover to grow on a steep bank, which is approximately 20x200 feet and is exposed to full sun, Mr. Davis suggested the use of *Forsythia suspensa*, planted at the top and allowed to trail downward, Hall's Japanese honeysuckle or *Euonymus coloratus*.

D. E. E.

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CONTROL OF ELM PESTS.

The question, "Can Elm Bark Beetle and the Phloem Necrosis Leaf Hopper be Controlled with DDT?" was discussed by Russell Whitten, Roger Swingle and Jack Wooten, of the United States Department of Agriculture, at Columbus.

In the control of Dutch elm disease and phloem necrosis it is necessary to obtain 100 per cent control of the vectors, as just one uncontrolled insect vector may cause the death of the plant. Thus it is necessary to have a complete cover of insecticide at all times when the insects are active. Wettable DDT will not give a persistent cover, as it will become resuspended in the presence of rain water and wash away. The residue of wettable DDT has been found to be effective for only about thirty-five days.

Some special emulsions have been formulated which, upon drying on the bark or leaf surface, leave a deposit of minute DDT crystals which adhere well and will not wash away. It is possible with these emulsions to lay down a deposit which will persist up to 300 days; however, for the sake of safety, its persistence is rated at about 100 days. Success is based upon proper time of application and complete coverage of the bark for the control of the bark beetle, and complete coverage of the leaf surfaces for control of the leaf hopper.

The speaker listed the following formulas for three emulsion concentrates which can be stored and diluted as directed at the time of application:

A. Two and one-quarter gallons benzene, one gallon Velsicol AR 50, sixteen pounds technical DDT, one pint Triton X100.

B. Four gallons Xylene, sixteen pounds technical DDT, one pint Triton X100.

C. Five gallons Xylene, two and one-half gallons Acme white oil, twenty pounds technical DDT, twenty ounces Triton X100.

The above ingredients are mixed in the order listed with the addition of heat. Caution must be exercised in heating because the solvents are inflammable. Formulations A and B are designed for use with the regular hydraulic sprayer, while formulation C is for use with the mist blower.

For controlling bark beetle, which carries the Dutch elm disease, the following spray schedule is recommended:

1. The first application should be made before the leaves and flowers appear in spring. If using a hydraulic sprayer, use formulation A or B; di-

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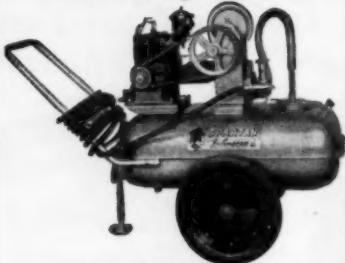
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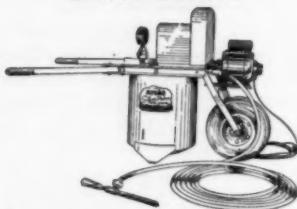
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lute to 100 gallons with water. If using a mist blower, use formulation C and dilute to twenty gallons with water.

2. The second application should be made after the first flush of growth, which should be from two to three months after the first application. For hydraulic sprayers use formulation A or B, diluted to 200 gallons with water. If using a mist blower, use formulation C diluted to forty gallons with water.

For controlling leaf hopper, which is the vector of phloem necrosis, this spray schedule should be followed:

1. The first application should be made when the leaves mature. Use formulations A or B, diluting to 200 gallons for use with hydraulic sprayers. If using a mist blower, use formulation C diluted to forty gallons.

2. The second application should be made in August after the new growth is completed. Use formulations A or B, diluting to 200 gallons for use with hydraulic sprayers. Use formulation C, diluting to forty gallons, for use with mist blowers.

For combined control of bark beetle and leaf hopper the following schedule is given:

1. The first application should be made before the leaves and flowers appear in the spring. Use formulations A or B diluted to 100 gallons for a hydraulic sprayer. Use formulation C diluted to twenty gallons for use with a mist blower.

2. The second application should be made when the leaves mature. Use formulations A or B diluted to 200 gallons for a hydraulic sprayer. Use formulation C diluted to forty gallons for use with a mist blower.

3. A third application should be made in August after new growth is completed and is the same as the second application.

The average 50-foot tree requires from twenty to thirty gallons of the formulation when applied by a hydraulic sprayer and from three to four gallons when applied by a mist blower.

In case of a build-up of spider, use one-half gallon of Acme white oil to 100 gallons of spray applied by a hydraulic sprayer.

Phloem necrosis causes a root rot. It can be identified at the base of the trunk by a typical butterscotch color of the new phloem tissue, often flecked with black spots. These black spots are made up of groups of dead cells. The butterscotch color is caused by a gummy deposit within the cells which can be dissolved. This phloem tissue, if rubbed rather vigorously between the fingers, gives off

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an odor similar to that of wintergreen. This is characteristic only of phloem necrosis. The disease started at Columbus, O., in 1937 and has caused losses up to 10,000 trees at Columbus in a single year. D. E. E.

TRANSPLANTING PRACTICES.

An open discussion of transplanting and fertilization practices was a feature of the short course for arborists and landscape gardeners at Ohio State University, Columbus, in January. The board for the panel was composed of Dr. L. C. Chadwick, department of horticulture, Ohio State University; E. W. Higgins, Frost & Higgins Co., Arlington, Mass., and Norman Armstrong, White Plains, N. Y.

The first question directed to Mr. Armstrong pertained to the hurricane which struck the east coast in 1938. Mr. Armstrong estimated that he replanted between 200 and 300 trees immediately after the storm; among them were elms, sassafras, silver maple, Austrian pine, larch and ash. The pines were replanted under protest by Mr. Armstrong and slowly died. The elms all survived and are good trees today. Sassafras trees up to seventeen inches in diameter have flourished since being replanted. The largest tree handled was a 44-inch one, which was reset after it had lain on the ground for about six weeks. Today this tree is in excellent condition.

All of the trees were fertilized at the time of replanting and again later on if they seemed slow in recovering or started to decline. The trees were heavily watered at planting time, some of them receiving as much as 500 gallons per watering. Comparatively little top pruning was done except for the removal of the broken limbs.

Most of these trees are still guyed. Some of the trees from which the guys had been removed blew down during a high wind in 1944. Mr. Armstrong would not recommend replanting these trees and would not under any circumstances do such work himself.

The rig which was used for raising and resetting the trees was a flat steam shovel crane with a 60-foot boom.

Mr. Higgins was asked how he provided drainage when transplanting. He replied that, in the first place, his operations are confined largely to an area of light soils. Under this condition it is necessary only to construct the hole so that its perimeter is lower than its center. In

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B. F. CONIGISKY
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heavy soils, agricultural tile should be used to carry water to a storm drain or a sump. Mr. Higgins said that one is likely to overwater trees which are transplanted and explained that once a week was usually sufficient, particularly with oaks. A compact ball often presents a problem, since water tends to run to the perimeter of the ball. Mr. Higgins recommended the use of the Aero-fertil gun for watering such balls so that penetration is assured. He emphasized the necessity of mulching every tree, since this conserves moisture and stabilizes the soil temperature.

Dr. Chadwick pointed out that a third outstanding benefit to be derived from a mulch is improved soil aggregation which stimulates root action. This is a point not emphasized strongly enough, he said. Aggregation is especially good under a corn-cob mulch.

One of the arborists present claimed to have had good results in moving 12-foot to 14-foot pines in a bare-root condition. Mr. Higgins had had similar experience and said probably we shall find that many more of our trees can be handled in this way. An important factor in moving larger trees is the need for a weight on the roots commensurate with the weight of the top.

Mr. Higgins stated that, although it is possible to move trees at any time of the year, the most undesirable time is in the winter, when the soil is frozen. He stressed the danger of breaking the ball when it is first rotated in one direction and then the other while it is being placed in the hole.

Someone asked if a tree should be defoliated before being moved in summer. Mr. Higgins' answer was a definite "no." He said he tries, in every way possible, to preserve this functioning leaf surface, depending upon it to help support the plant while it is becoming reestablished. He does not use hormones in his transplanting operations, because he does not believe that they will do anything that good friable soil will not do.

D. E. E.

A BORDER of tulips planted along the front of the grounds of the new nursery opened by "Dutch" Van Rysbergen, April 9, near Willmar, Minn., gave those present at the opening a preview of the Dutch atmosphere which is planned for the nursery. An authentic Dutch windmill and many more tulips will be added during the summer and fall. The 7-acre nursery includes a 24x60-foot salesroom and an office building.

**AZALEAS FOR
NORTHERN GARDENS.**

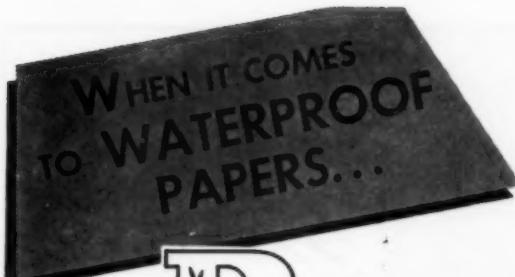
[Continued from page 34.]

native of Korea, Manchuria and Japan, this is the first deciduous rhododendron to bloom, with pale rosy-purple flowers usually appearing by mid-April. This year they came two weeks earlier. It grows about six feet tall and is hardy in zone 4, but local climatic conditions will probably determine whether or not it is grown. Because the flowers come out so early in the spring, they are frequently injured by late frosts, especially when planted on a warm slope with a southern exposure. Consequently, they might best be placed on a shaded northern slope, where the flowers may be retarded just enough to miss the late freezes. Aside from this, it is a good plant and one of the conspicuous harbingers of spring.

Rhododendron nudiflorum: The native Pinxter bloom, or wild honeysuckle, is familiar to most growers and is found growing native over a wide area of the eastern United States, with light pink to white flowers in mid-May. It is good for natural woodlands and will grow well in the full sun. The flowers appear before the leaves as in most of the azaleas which bloom up to this time in spring, but many gardeners prefer the more conspicuous colors of the Ghent hybrids or the Pinxter bloom's close relative, *Rhododendron roseum*.

Rhododendron obtusum: If conspicuous colors are wanted (i.e., red in several shades) this group of azaleas was made to order. It includes the many tender Kurume azaleas, as well as such stand-bys as amoenum, Hinodegiri, arnoldianum (of which there are several strains) and the fiery *R. obtusum kaempferi*. Most commercial growers are familiar with all these. Hinodegiri is slightly less hardy than amoenum, but its color is better, being a rose madder (amoenum is a rich magenta). Both are widely used and easily propagated by cuttings. The variety arnoldianum is a chance cross between amoenum and the hardy variety kaempferi. The hybrid is taller than amoenum, is hardy in zone 5 and ranges in color from crimson to magenta depending on the strain. The flowers of this hardy form are one and one-half inches in diameter.

The torch azalea (*R. obtusum kaempferi*) is the common mountain azalea of Japan and is one of the most vividly colored of all the hardy woody plants introduced from that country. The flowers are as much as two and one-half inches in diameter,



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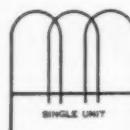


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appearing in mid-May, and are a porcelain-rose color (620 of the English Horticultural Colour Chart). Unfortunately, the flowers may be prematurely injured by hot sun; hence it is best planted in partial shade. Usually it grows about five feet tall, but some specimens attain a height of ten to twelve feet.

Rhododendron roseum: Hardy with R. nudiflorum in zone 3, this plant has flowers that are a bright pink and are fragrant. Hence this species is better to use than R. nudiflorum.

Rhododendron schlippenbachii: The royal azalea of Japan is perfectly hardy in zone 4 and has rose-pink flowers (427/1 to 427/3 of the English Horticultural Colour Chart) which are as much as three inches in diameter. A handsome azalea, it is blessed in the autumn with a reddish autumn color, another important reason why it should be planted, for not many azaleas have good fall color.

Rhododendron vaseyi: Another native of the southeastern United States (chiefly North Carolina), this pinkshell azalea is hardy in zone 4 and may grow to from six to nine feet. It, too, has reddish autumn foliage and does well either in normal soil or in moist soils at the borders of ponds. It is surely one of the best of our natives. When large numbers of plants are grown from seeds, there are always a few with pure white flowers and a few with deep pink to rose flowers. Most of the others are a delicate pink. It would seem that some enterprising nurseryman might well propagate these two variations asexually, for they certainly are excellent, alone or in combination.

Rhododendron viscosum: The swamp azalea grows tall, nine to fifteen feet, and is the last of the hardy azaleas to bloom, with flowers appearing in July after the leaves are full grown. Nevertheless, the fragrant white flowers are conspicuous, and its ability to grow in swamp-land, together with its orange to bronze autumn color, makes it another to be considered when extensive azalea plantings are contemplated.

Rhododendron yedoense: The Yodogawa azalea of Korea and Japan is the double purple one with twelve petals. It was discovered first and was given the specific name. Later the single-flowered form was found and given the varietal name poukhanense. Both are low shrubs, five to six feet tall, cyclamen purple to petunia purple of the English Horticultural Colour Chart. The single-flowered form blooms freely even

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when small, but the color of these Korean plants is one that is difficult to work in properly with others. Usually these azaleas are best used alone and not in combination with others that bloom at the same time. They make dense, compact shrubs and in massed plantings will completely cover the ground.

Here then are more than fifty hardy azaleas now being grown for gardens of the northern United States (zones 3 to 5) affording colorful bloom for at least one-fourth of the year. Commercial growers who are unfamiliar with them might do well to learn their respective merits, since they are among the most colorful of spring-blooming shrubs.

OKLAHOMA GROWING STOCK EXEMPT FROM TAX.

Oklahoma nurserymen recently obtained passage of a bill in the state legislature which exempts growing nursery stock from taxation. House bill 70 amends 68 O. S. 1949, section 15.4, relating to personal property which is taxable, to include "Third item—the dormant and other stock ready for sale of nurserymen."

Besides saving nurserymen expense, this bill will avoid the confusion caused recently in some counties by an attempt to assess growing nursery stock.

SNEED SALE CLOSED.

A settlement has been made in the condemnation suit of the city of Oklahoma City against the Sneed Nursery Co., Oklahoma City, and the nursery has sold its permanent improvements and preferred rights lease to the city, which plans to use the land for a new fairground and other purposes.

In the sale, the firm received an adequate amount to compensate for the buying of 160 acres of similar land on Northeast Twenty-third street, states J. Frank Sneed, owner of the Sneed Nursery Co. The firm will be operated at the present address for three years, since the contract allows that amount of time for the growing and selling of the nursery stock on the present site.

ELLIOTT'S NURSERY is being started on Stone Point road, Charlottesville, Va., by T. A. and Ida W. Elliott.

A NEW nursery has been started by Albert Neuner at Eicher and Roosevelt roads, Emsworth, Pa., and has been named Neuner's Evergreen Nursery.

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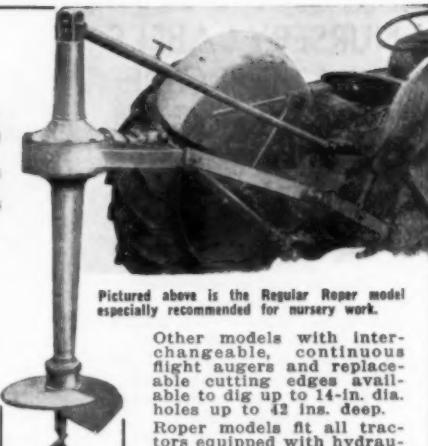
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OBITUARY.

Floyd Bradley.

Floyd Bradley, 63, president of the Templin-Bradley Co., seed and nursery firm at Cleveland, O., died suddenly April 19.

Mr. Bradley was born December 22, 1885, at Cleveland. After ten years with the mill supply and power plant equipment industry, in 1912 he joined Mr. Templin and Mr. Crockett in incorporating the Templin-Crockett-Bradley Co., which Mr. Templin had started at Cleveland in 1906. Mr. Bradley was secretary of the firm until Mr. Crockett's death in 1920, when he was made vice-president and treasurer. When Mr. Templin died, Mr. Bradley became president and treasurer of the firm. He was active in many local organizations.

John D. Bunyan.

John D. Bunyan, florist and nurseryman at Rochester, N. Y., died at his home at that city April 16. He was 80 years old.

Surviving are his widow, Lillian; a daughter, Nancy, and two sisters, two brothers and several nieces and nephews.

TRACTOMOTIVE LOADER.

A new materials-handling loader is manufactured by Tractomotive Corp., Deerfield, Ill., the company that builds the Tracto-Shovel for the Allis-Chalmers model HD-5 track-type tractor. This new unit is called the TL-W Tracto-Loader and has a one-half cubic yard standard bucket.

It is mounted on rubber tires and has the bucket over the driving wheels and the steering wheels in the rear. The design, according to the manufacturer, provides exceptionally good traction and makes steering easier, especially where the going is soft.

The TL-W's short over-all length, twelve feet with bucket down, and narrow width, five feet nine inches (outside tire measurements), mean that it is small enough to be used where working areas are limited. Close quarter operation is possible, too, because it does not have to ram into material to get a load. The bucket is eased into the material and picks up the load through forward crowding action and an automatic tilt-back feature.

EDWARD L. BAKER, of Baker Bros. Nursery, Fort Worth, Tex., a past president of the American Association of Nurserymen, has been elected to the Fort Worth city council.

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